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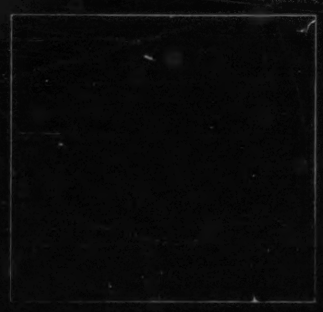

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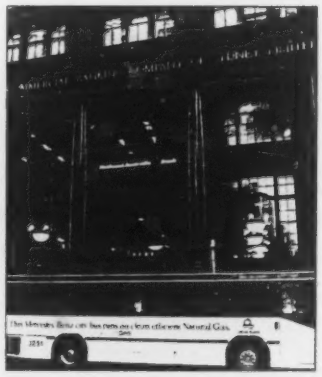

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This natural gas-powered transit bus, part of Australia's effort for NGV's proudly proclaims its contribution to Sydney's environment.

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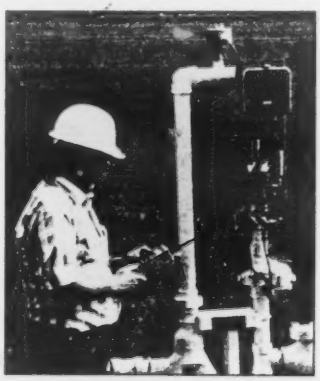

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The Australian Natural Gas Industry

By R.D. Palmer
General Manager
Gas and Fuel Corp. of Victoria,
Melbourne, Victoria, and President,
The Australian Gas Association,
Canberra, ACT, Australia

The land area of Australia is almost as great as the U.S. but the country has only a tenth of the population. By mid-1990, 17 million people lived in Australia, more than 85% of them located in urban areas.

Australia is a federation of six sovereign states. The federal government has a dominant role in many of the nation's affairs, but the operation of gas networks is not one of them.

The six mainland states obtain their natural gas from a single source. With the exception of New South Wales and South Australia, which both obtain their gas from fields in the Cooper Basin, each state's source is exclusive. The Northern Territory has its own source of gas, but the Australian Capital Territory draws on the same source as does New South Wales.

Although provincial cities are being added to the gas supply network, the bulk of natural gas systems is concentrated in the capitals cities. The trend of network expansion is expected to continue in New South Wales, Queensland and Western Australia.

Gas Supplies

Australia is well endowed with natural gas. Proved and probable reserves total approximately 81 Tcf, a reserves-to- production ratio of 105 yr. However, the particular sources currently supplying some states are expected to deplete sooner that that.

Some 81% of reserves are located in the west and north, far from the major demand centers in the southern and eastern states. Current sources of domestic supply are expected to be depleted at different times.

Comprehensive studies of natural gas supply and demand in Australia undertaken by The Australian Gas Association have indicated that gas supply in Australia is subject to significant economies of scale.

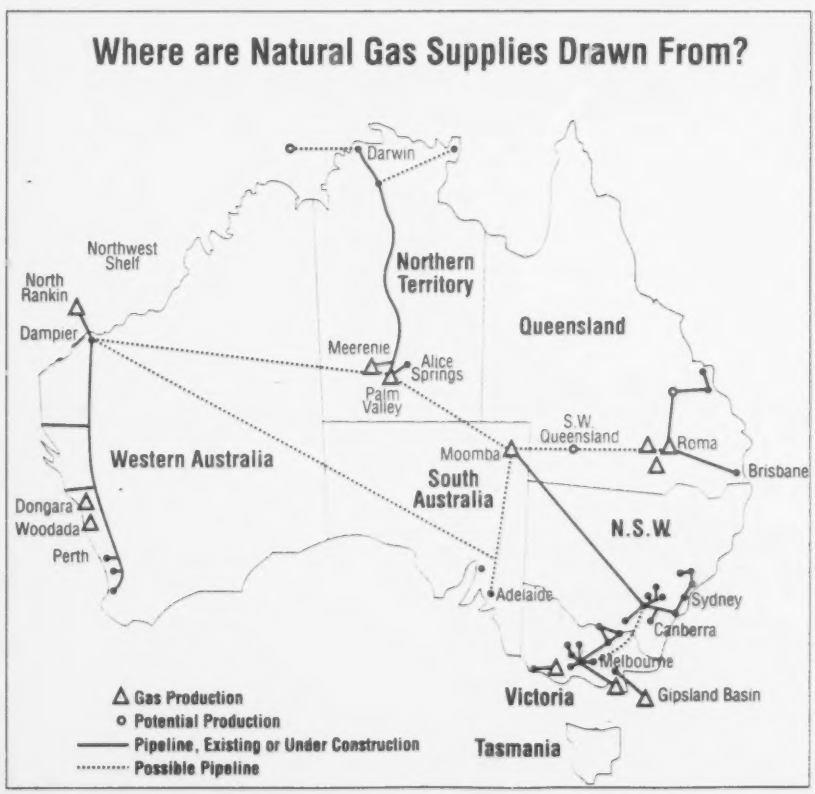
The most cost effective way of developing supplies in the future is by interconnecting the pipelines delivering gas to the southern and eastern states from the Gippsland and Cooper basins and linking them to the Amadeus Basin. This would enable these three sources to be depleted together, allowing large supplies from the north and west to be brought onstream with minimum buildup.

By 2010, when the new supply would be required, annual demand in the southern and eastern states is expected to reach 500 Bcf. This would require a pipeline of at least 40 in. (1,000 mm), allowing economies of scale to be exploited. The first link in such a national pipeline, between the Amadeus and Cooper basins, is currently being actively considered.

There are no federal government arrangements for actively coordinating or regulating the supply of natural gas in Australia. The only roles played by the federal government are indirect in its constitutional jurisdiction over exports and offshore exploration and development.

Federal jurisdiction over offshore exploration and development is exercised by regulation of permit allocation, exploration work programs and production licenses. All other regulation of natural gas supply and use is under the jurisdiction of the individual state governments.

The Australian Gas Association, a voluntary association of gas distribu-



Australian Gas Utilities

Fiscal Year 1990

Company	Gas Revenues (MM A$)	Number of Customers	Miles fof Main	Employees
Gas and Fuel Corp. of Victoria	$806.8	1,170,000	14,322.7	6,129
The Australian Gas Lignt Co.	$532.9	550,000	9,920.5	2,571
State Energy Commision of Westerm Australia	$461.4	243,000	6,352.8	536
SAGASCO	$153.0	270,000	3,683.2	1,047
Gas Corp. of Queensland Ltd.	$30.0	67,000	809.8	404
Allgas Energy Ltd.	$40.5	48,000	882.4	333

tion utilities, with associate membership of gas producers and other industry participants, is the principal group acting on behalf of the industry at the national level.

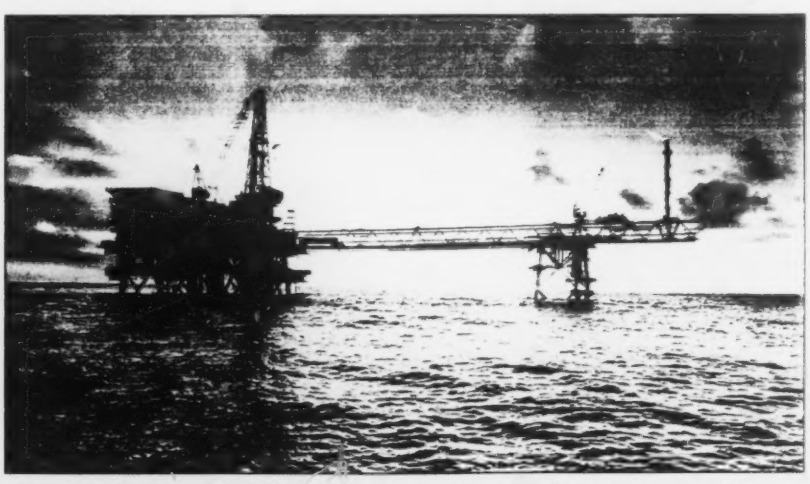
Production/ Transmission

Australian gas production has increased rapidly over the past 10 yr, from approximately 360 Bcf in 1980 to almost 800 Bcf in 1990. However, over the same period the reserve-to- production ratio has increased from 81 yr in 1980 to the current ratio of 105 yr.

The pipeline network, which gathers natural gas from the producing fields and transports it to major consuming centers, has grown to almost 7,500 miles (12,000 km).

Most of the major gas transmission pipelines in Australia were completed between 1969 and 1971. The network has continued to expand over the past 20 yr.

The main owners and operators of the gas pipelines are the utility companies, including Gas and Fuel Corp. of Victoria, the Australian Gas Light Co. and the government-owned State Energy Commission of Western Australia. Two government enterprises, the Pipeline Authority of South Australia and the federal Pipeline Authority, also own and operate mainline transmission systems.



Natural gas produced from the North West Shelf offshore fields is shipped to Japan as LNG or transported to cities in southern Western Australia, including Perth.

Gas Distribution

Distribution networks for town gas were built in most capital cities long before natural gas became available in the late 1960s. As a result, institutional arrangements for gas distribution are the result of evolution over many years.

Given Australia's population and size, it is not surprising that each state has its own unique arrangements for distributing natural gas. These arrangements cover the range from wholly owned state government enterprises to private companies.

With the exception of Queensland, which has two gas utility companies, states have a single utility for gas distribution. Western Australia is the only state in which gas and electricity distribution are under the control of a single organization, the wholly-owned state government enterprise State Energy Commission of Western Australia.

Victoria is the dominant state in residential gas sales, while Victoria, New South Wales and Western Australia all have significant industrial sales. Electricity generation market for natural gas is dominant in South Australia and the Northern Territory.

Future Demand

Natural gas will provide 17% of Australia's primary energy in 1990-91, compared to a 6.6% share in 1973-74.

Natural gas' increased share of the total national energy picture is largely accounted for by the displacement of increasingly expensive oil-based fuels. By 1990-91, the contribution of heating oil, industrial diesel fuel and fuel oil to final energy demand has declined to 3.8%, down from 17.1% in 1973-74.

The manufacturing sector is the most important consumer of natural gas. The share of natural gas in electricity generation is primarily constrained by past commitments to large base-load coal-fired plants and overcapacity in New South Wales and Victoria states.

The increasing consumption of natural gas in the mining sector is largely associated with gas consumed in pro-

Australian Pipeline Mileage as of July 1, 1990

(Miles)

Onshore Transmission	New South Wales	Victoria	Queensland	Southern Australia	Western Australia	Northern Territories	Total
Natural Gas/LPG	1,259	1,254	599	654	1,466	1,120	6,352
Crude Oil/Liquids	0	265	687	409	0	168	1,529
Total	1,259	1,519	1,008	1,063	1,466	1,288	7,881
Onshore Gathering							
Natural Gas/LPG	0	73	221	292	7	0	586
Crude Oil/Liquids	0	188	86	210	21	0	505
Total	0	261	307	502	28	0	1,091
Offshore							
Natural Gas/LPG	0	153	0	0	102	0	255
Crude Oil/Liquids	0	166	0	0	27	0	193
Total	0	319	0	0	129	0	448
Totals	1,259	2,099	1,315	1,565	1,623	1,288	9,420

duction and processing of natural gas and crude oil, including gas production shipped to Japan as LNG.

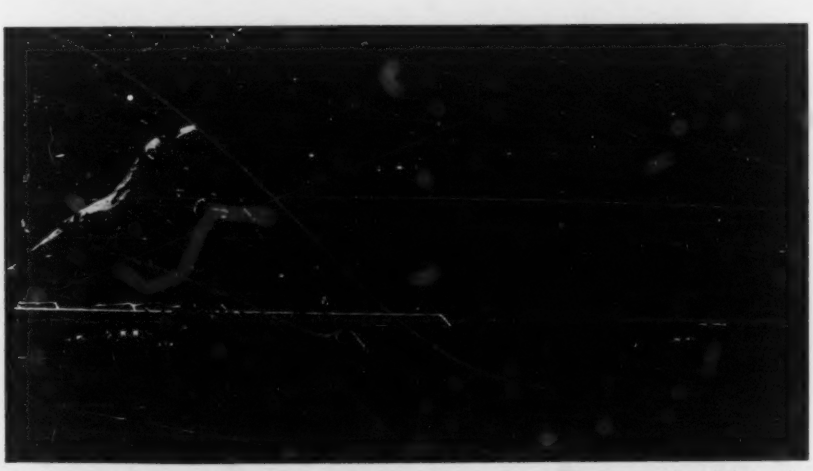
Future Developments Studies by The Australian Gas Association and other bodies have shown gas is strongly competitive with coal for peak- and intermediate-load electricity generation in Australia.

The lower capital costs of gas turbine and combined-cycleplants more than compensate for the higher cost of natural gas as a fuel. Generating costs could be reduced by 15% on the average if 50% of the generating capacity were gas turbine and combined cycle plants.

The full potential of gas for electrical generation will not be reached until about 2010 because of the over-capacity of generating plants in the southern and eastern states and the time needed to retire existing facilities.

By this time, large supplies could be available from gas sources in the west and north. Gas required for electricity generation could total 300 to 400 Bcfy by 2010, enabling the realization of further economies of scale in gas supply.

Natural gas vehicles are under development in Australia and a number of state government transport operators have purchased and are continuing to purchase natural gas-powered buses for public route service. Part of the motivation for support by the government for development of NGVs in Australia is the decline in indigenous oil reserves and the availability of large, economic supplies of domestic natural gas.



The gas processing facility in central Australia treats natural gas produced from the Moomba Field, in South Australia state.

Conclusion

The gas industry in Australia looks forward to continued growth in its traditional markets and development of new markets in transport and electricity generation.

Abundant reserves are available to meet these demand. The challenge to the industry is to ensure that the transition to long-distance, trans-continental transmission of Australia's gas reserves is carried out effectively and efficiently. —P&GJ

Asia Pacific Turns to Gas

By William S. Scholes
P&GJ Correspondent,
Sydney, Australia

The Persian Gulf War brought home to the countries of Southeast Asia, in particular, how finely balanced their economies are when Middle East oil supplies are threatened.

The war has given further impetus to the proposed ASEAN (Association of South East Asian Nations) gas pipeline, a $10-billion to harness the gas resources of the Asian Pacific region. The project will enable power generators and industrial facilities to convert from oil to natural gas, reducing region's dependence on Middle East oil imports, currently at 73% of total demand or 12.7 million bbl per day.

An estimated 60% of the world's population lives in Asia Pacific, more than 3 billion people. For every point of growth in gross national product, countries in the region require an increase of 0.8% in energy demand. Southeast Asia is currently reporting the highest economic growth rate in the world, with Malaysia for example averaging 8% growth over the last 3 yr.

Asian Pacific oil demand is expected to expand at an average of 3% annually, with consumption in countries such as South Korea, Thailand, the Philippines, India and Pakistan likely to increase more than the average. Petroleum consumption in Singapore and Malaysia will be lower than average due to substitution by natural gas.

Most countries in the Asia Pacific region are now offering improved contract terms or permits for gas and oil exploration in another effort to reduce dependence on Middle East energy supplies. The most active countries with planned field developments are Malaysia, 52 fields; India, 41; Australia, 36; Indonesia, 35; China, 29; Thailand, 13; and Brunei, 12.

Japan's Approach

BHP Petroleum, Australia, has been approached by a Japanese petrochemical company to supply natural gas condensate from the North-West Shelf project under long-term contract, the first step in diversifying Japanese industrial sources of feedstock supply.

The approach to BHP by Mitsui Petrochemical Industries is a part of a plan to diversify dramatically its raw material sources and curb its dependence on naptha supplies from the Middle East. Mitsui expects to raise the level of LPG and condensate used from 5% of total feedstock to 10% by the end of 1991 and to 40% by 1993.

The proposed Japanese contracts may mean a sharp increase in the volume of Australian NGL exports to Japan. It is the first time a Japanese company has moved to lock-in supplies of condensate as an alternative to naptha in plastics production.

Australian condensate producers would have to follow the lead set by Santos Ltd. to convert NGL into naptha prior to export. A recently imposed surcharge of $2.50/bbl on all Japanese imports of crude oil or condensate does not apply to naptha.

Condensate from the North-West Shelf project, operated by Woodside Petroleum Ltd., is prized by the Japanese as a potential replacement for

naptha. The North-West Shelf project does not have the infrastructure to export its condensate as naptha.

The North-West Shelf gas project could be expanded to include the production of LPG in addition to its large-scale LNG exports to Japan. The LPG option has been under almost continual consideration since the project was originated more than a decade ago.

Gas from the North Rankin field is unusually dry and free of NGL, which are used to produce LPG components. The Goodwyn gas field, which will come on-stream in 1993, contains far more liquid hydrocarbons, making the extraction of LPG more viable.

Indonesia To Benefit

Indonesia is planning to build three more LNG production trains, each with an annual production capacity of 2.3 million metric tons.

The first is to be completed by 1994 with the other two by the end of the decade. When all are on-stream, Indonesia's LNG production capacity will be 26.5 million metrics tons per year. Indonesia currently exports 17 million metric tons/yr of LNG to Japan, 2 million metric tons/yr to South Korea and 1.5 million metric tons/yr to Taiwan, all under 20-yr contracts. All are currently negotiating with Petromina, Indonesia's state energy company, for increased supplies.

Large gas discoveries in the Natuna Sea will be developed and the gas transported to markets in Singapore and Sumatra. Singapore will receive 140 MMcfd from Natuna Sea field, which has reserves estimated at 45 Tcf, half of Indonesia's total. Esso is considering several options for developing the field, including construction of a grass-roots LNG plant on Natuna Island.

Under consideration are a pipeline system connecting the whole length of Sumatra and Java, a 280-mile (450 km) pipeline network from the Kangean gas field offshore Madura Island to Surabaya in East Java and a 300-mile (480 km) pipeline via Batam and Singapore to South Sumatra. The Batam- Singapore pipeline will cost $700 million and take 3 yr to build.

ASEAN Pipeline

An Italian-French consortium is studying the economic and technical feasibility of the $10-billion trans-ASEAN gas pipeline project, with a report due soon. Consortium members include Agip, Agip Petroli, Gaz de France, IMI, SNAM, Total and Trans Eng.

Geographical location of ASEAN members and the gas fields dictates a linear structure to the pipeline grid, making it easier to connect new fields and new markets.

The Trans-ASEAN pipeline system will consist of a main line that begins in the Gulf of Thailand and terminates on Luzon Island in the Philippines, crossing Thailand, Malaysia, Sumatra, Java and Borneo.

The system is divided into a seven-segment mainline and four branch pipelines. Each main segment will have a capacity of 53 MMcfh or 425 Bcfy. Branch lines will have varying capacities. Gas will move in both directions between the Kerteh Field in Malaysia and the Surabaya Field in Java, as well as in northeastern Kalimantan.

The entire system will consist of 4,950 miles of pipeline, including 3,900 miles of mainline, and a total of 21 compressor stations. The offshore segments will total 680 miles.

Geographical location of ASEAN members and the gas fields dictates a linear structure to the pipeline grid, making it easier to connect new fields and new markets.

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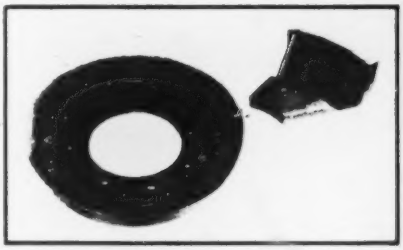

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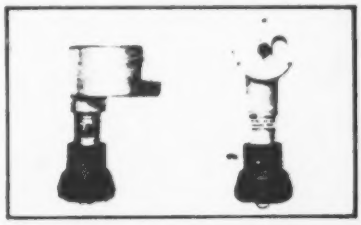

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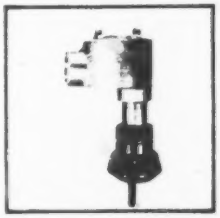

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Natural Gas Reserves in ASEAN Countries

Company	Natural Gas Reserves, Tcf	Percentage of ASEAN Reserves
Brunei	11.7	8
Indonesia	83.2	54
Malaysia	53.5	34
Phiippines	—	—
Singapore	—	—
Thailand	6.5	4
Total Proven Reserves	**154.9**	**100**
Estimated Probale Reserves	100.6	

The seven major segments are:

- Gulf of Thailand to Kerteh: 528 miles of pipeline, including 99 miles of offshore pipeline and 429 miles of onshore line, and three compressor stations.
- Kerteh to Malaysia: 193 miles of pipeline, one compressor station, bi-directional flow.
- Malaca to Merak: 732 miles of pipeline, including 71 miles of offshore line and 661 miles of onshore pipeline, and three compressor station. Bi-directional flow.
- Surabaya to Sepasu: 661 miles of pipeline, including 233 miles of offshore pipeline and 428 miles of onshore pipeline, and four compressor stations.
- Sepasu to Kudat: 571 miles of pipeline and three compressor stations. Bi-directional flow.
- Kudat to Manila: 748 miles of pipeline, including 276 miles of offshore pipeline and 472 miles of onshore pipeline.

Singapore and Thailand—have total proven gas reserves of 155.4 Tcf (4.4 billion cu m). Indonesia and Malaysia account for 88% of the reserve total.

In 1988, ASEAN members produced 2.8 Tcf (83.4 Bcm), of which 2.4 Tcf (68.3) were marketed. Some 1.4 Tcf (40 Bcm) were exported to Japan and South Korea as LNG.

With 2 yr left in Brunei Darussalam's 20-yr LNG sales agreement with Japan, the eyes of the international gas industry are turning toward the sultanate.

The sales contract, covered the export of 5 million tons of LNG annually, is the first in a series of contract renewals that will be negotiated in Asia during the 1990s. Discussion will be under way as Japanese importers step up efforts to secure oil and gas imports from non-Persian Gulf sources.

Malaysian Diversification

Malaysian LNG has signed a letter of intent to supply 2.25 million metric tons of LNG per yr for 20 yr to Taiwan's Chinese Petroleum Corp. The LNG will be used by Taiwan Power Authority for electricity generation. Malaysian LNG has signed a similar contract with South Korea's Korea Gas Corp.

Previously the country's only LNG exports were to Japan, where Tokyo Gas and Tokyo Electric Power purchased a total of 6 million metric tons to 6.5 million metric tons annually. Malaysia LNG recently signed a agreement with Saibu Gas of Japan in 1990. Negotiations are continuing among Malaysia LNG and Toho Gas, Osaka Gas and Kansai Electric for additional sales.—**P&GJ**

An estimated 60% of the world's population lives in Asia Pacific, more than 3 billion people. For every point of growth in gross national product, countries in the region require an increase of 0.8% in energy demand.

Reserves that could be connected by the pipeline include fields in north, central and southern Sumatra; northwest Java; Natuna; East Kalimantan; Gulf of Thailand; South China Sea; central Luconia; and Brunei.

ASEAN members—Brunei, Indonesia, Malaysia, Philippines,

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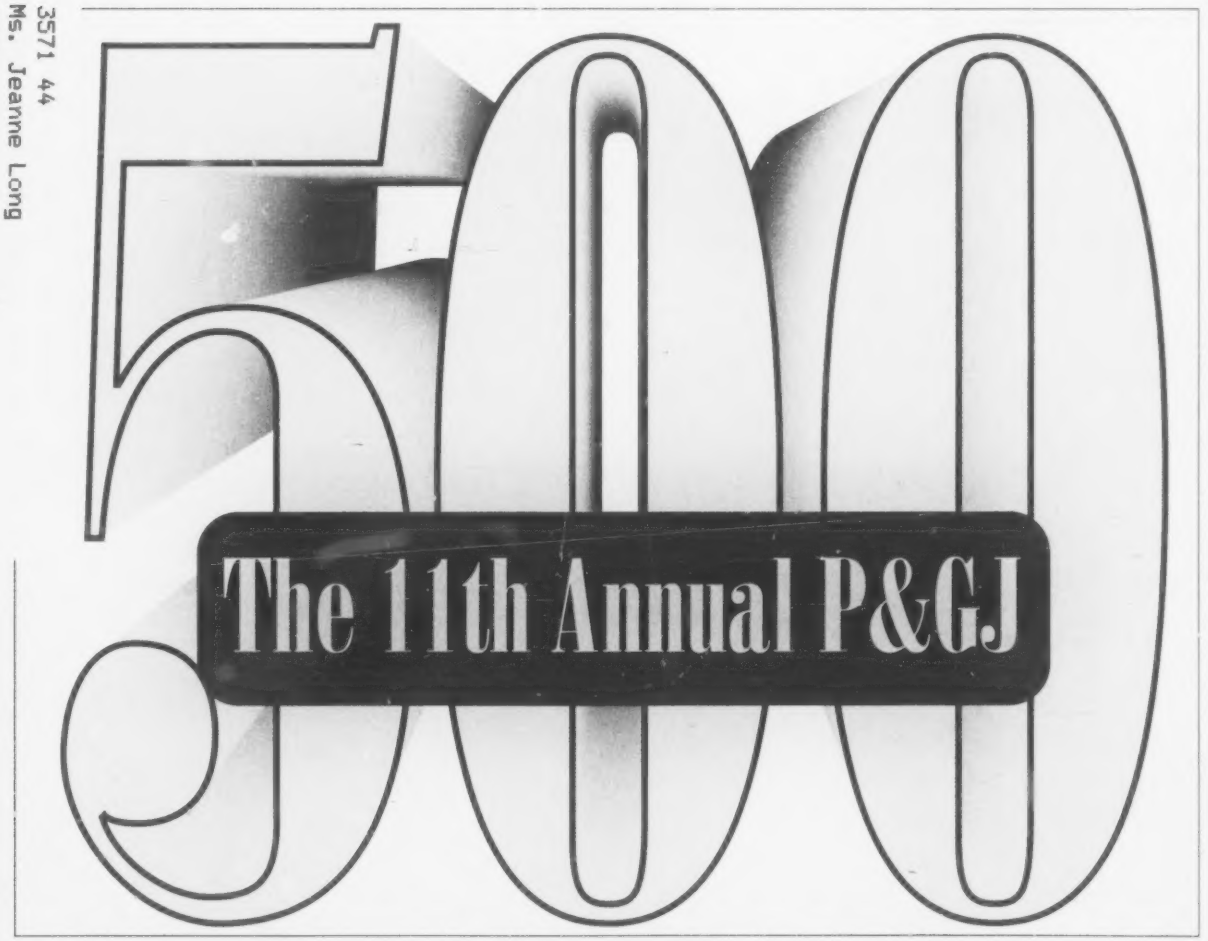

- The Top 300 Gas Distribution Utilities By Customers
- The Top 100 Natural Gas Pipelines By Miles Of Pipeline
- The Top 100 Liquids Pipelines By Total Barrel Throughput

P&GJ

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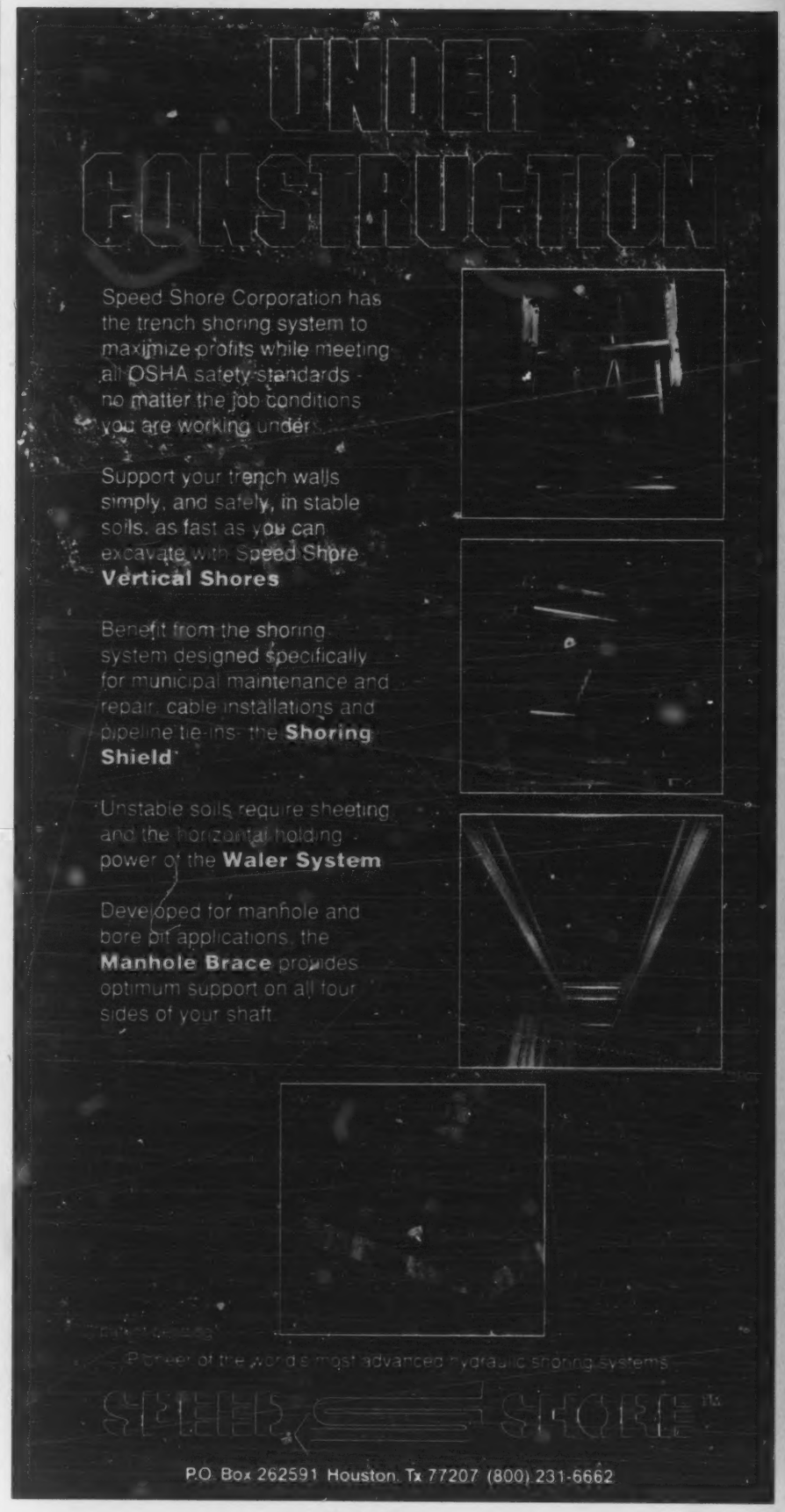
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500
The Top 300 Gas Distribution Utilities By Customers
The Top 100 Natural Gas Pipelines By Miles Of Pipeline
The Top 100 Liquids Pipelines By Total Barrel Throughput

ON THE COVER
The 11th Annual PIPELINE & GAS JOURNAL 500 Report provides details on the leading U.S. companies that transport energy through pipelines.

NEXT MONTH
Machines that provide the push to move natural gas and liquid hydrocarbons through long-distance pipelines, prime movers and compressors will be featured in the October PIPELINE & GAS JOURNAL, with a special report on corrosion control.

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Dimensions of the 500 leading U.S. companies involved in the transportation of energy through pipelines in 1990.

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The Top 100 Natural Gas Pipelines Through Miles Of Pipeline
The Top 100 Liquids Pipelines By Total Barrel Throughput

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Alphabetical Listing--Natural Gas Pipelines
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Dimensions Of The 500 Leading U.S. Energy Pipeline Companies

The 11th P&GJ 500 Report

by Jim Watts, Editor

More than 2 million miles of energy pipelines operating in the U.S. delivered trillions of cubic feet of natural gas and billions of barrels of liquid hydrocarbons to homes, schools, factories, offices, refineries, distribution points and commercial facilities in all 50 states during 1990. The sophisticated U.S. energy pipeline infrastructure is the safest and most efficient energy distribution system ever developed.

This system, with a net value of more than $119 billion at the end of 1990, consists of 532,000 miles of gas and liquid transmission lines and 1.6 million miles of gas distribution mains and services. Operators spent almost $9 billion in 1990 for capital expenditures to keep their systems safe, reliable and efficient.

The 500 companies contained in the report had operating revenues of more than $117 billion. Some 258,000 employees worked at these companies, large and small.

Gas Utilities

The top 300 gas distribution utilities served a total of 54,757,692 customers, up 1.5 million customers from year-end 1989's total of 53,249,082.

Southern California Gas Co., Los Angeles, was again the largest gas utility in the nation during 1990, with more than 4.6 million customers, some 8.4% of the total. In a significant move, Arkla Inc., Shreveport, moved from 18th in 1989's 500 Report to third in the latest ranking. This shift reflects Arkla's acquisition over the past several years of Entex, Houston, and Minnegasco, Minneapolis.

The warmer-than-usual weather last year and 1990's economic slowdown was reflected in total gas sales, which at 9.058 Tcf were down from 10.6 Tcf in 1989 and 11.4 Tcf in 1988. However, the top 300 utilities reporting moving 2.639 Tcf in gas for others, for a total throughput of 11.7 Tcf.

Total operating revenues were down, with 1990 revenues of $44.272 billion off from $50.8 billion in 1989. Operating income was also off, from $4.2 billion in 1989 to $3.6 billion in 1990. Many gas utilities are owned by municipalities or utility districts, which are often not allowed to make any profit under state laws or charters.

Total plant value was steady at $41.8 billion as was additions to plant at $4.4 billion.

The top 300 gas utilities operated a total of 1.04 million miles of mains and 609,000 miles of service lines at the end of 1990. They had some 173,000 employees.

Gas Pipelines

Total throughput reported by the top 100 natural gas pipelines was up significantly in 1990, at 46.113 Tcf compared to 40.5 Tcf in 1989. Total gas transported for others was 19.352 Tcf, up from 17.9 Tcf in 1989.

The gas moved through a total of 355,952 miles of pipeline in 1990, including 261,899 miles of transmission pipeline, 87,710 miles of gathering pipeline and 6,343 miles of pipelines in storage areas. The total system net value— original cost minus depreciation—was $58.7 million, up from $38.9 billion in 1989. Additions to plant totaled $3.875 billion, compared to $3.4 billion in 1989.

El Paso Natural Gas moved a total of almost 4 Tcf through its 20,000-mile pipeline system, with some 1.249 Tcf transported for others.

Northern Natural Gas, an Enron unit, maintained its number one position in the listing, with 23,582 miles of pipeline and total throughput of 3.691 Tcf.

The top 100 natural gas pipelines reported operating revenues of $65.7 billion with operating incomes of $4.6 billion. Revenues were up from 1989's $45.7 billion but income plummeted from $17.9 billion.

The top 100 natural gas pipeline companies reported slightly more than 75,000 employees.

Liquids Pipelines

The top 100 liquids pipelines in the U.S. moved a total of 12.452 billion bbl in 1990, compared to 12.32 billion bbl in 1989, 12.64 billion bbl in 1988 and 12.36 billion bbl in 1987.

The total includes 7.613 billion bbl of crude oil and 4.839 billion bbl of refined products and natural gas liquids.

The shipments took place through a total of 176,001 miles of pipeline, including 35,275 miles of crude oil gathering lines, 60,785 miles of crude trunk pipelines and 79,941 miles of products trunk pipelines. Total plant value was $16.141 billion as of Dec. 31, 1990, with $623.6 million in additions to plant during the year.

Colonial Pipeline Co. took the top spot in 1990 barrel movements, shipping 665.3 million bbl of products through its 5,274-mile system. Colonial's throughput went up from 646 million bbl in 1989 and 636 million bbl in 1988.

Alyeska Pipeline Service Co., which operates the Trans-Alaska Pipeline System for the partners, dropped from first to third. TAPS throughput declined to 636.2 million bbl in 1990, down from 688 million bbl in 1989 and 744 million bbl in 1988.

The top 100 liquids pipeline companies reported total operating revenues of $7.365 billion with operating income of $3.453 billion. Employees totaled 10,655.

The Top 10 Liquids Pipelines In Miles Of Pipelines

Rank 90	Rank 91	Name Of Company	Miles of Pipeline
1	1	Amoco Pipeline Co.	11,850
2	2	Mobil Pipe Line Co.	9,647
3	3	Exxon Pipeline Co.	9,341
4	4	Chevron Pipe Line Co.	7,793
5	5	Conoco Pipe Line Co.	7,219
6	6	Shell Pipe Line Corp.	7,214
7	7	Mid-America Pipeline Co.	7,120
8	8	ARCO Pipe Line Co.	6,894
9	9	Williams Pipe Line Co.	6,674
10	10	Texaco Pipeline Inc.	6,400

The Top 10 Gas Pipelines In Additions To Plant

Rank 90	Rank 91	Name Of Company	1990 Additions To Plant ($000)
1	1	Texas Eastern Transmission Corp.	257,890
—	2	Great Lakes Gas Tranmission LP	233,977
5	3	Columbia Gas Transmission Co.	226,042
7	4	Tennessee Gas Pipeline Corp.	202,715
2	5	Transcontinental Gas Pipe Line Corp.	170,618
—	6	Natural Gas Pipeline Co. of America	158,060
6	7	Arkla Energy Resources	151,283
—	8	ANR Pipeline Co.	120,518
3	9	CNG Transmission Corp.	114,362
—	10	Trunkline Gas Co.	111,096

The Top 10 Gas Utilities In Miles Of Piping

Rank 90	Rank 91	Name Of Company	Miles of Distribution Piping
1	1	Southern California Gas Co.	82,447
6	2	Arkla Inc.	65,593
3	3	Northern Illinois Gas Co.	48,498
4	4	Atlanta Gas Light Co.	46,347
2	5	Pacific Gas & Electric Co.	40,582
7	6	Lone Star Gas Co.	29,291
8	7	Consolidated Gas Distribution Companies	29,275
9	8	Michigan Consolidated Gas Co.	28,290
10	9	Public Service Electric & Gas Co.	27,642
—	10	National Fuel Gas Distribution Corp.	27,489

The Top 10 Gas Utilities In Additions To Plant

Rank 90	Rank 91	Name Of Company	1990 Additions To Plant ($000)
1	1	Pacific Gas & Electric Co.	462,681
2	2	Southern California Gas Co.	364,583
5	3	Atlanta Gas Light Co.	122,802
3	4	Public Service Electric & Gas Co.	121,611
6	5	Northern Illinois Gas Co.	120,270
4	6	Consolidated Gas Distribution Companies	119,900
—	7	Michigan Consolidated Gas Co.	99,788
9	8	Brooklyn Union Gas Co.	98,987
7	9	Washington Gas Light Co.	89,577
—	10	Public Service Co. of Colorado	89,066

The Top 10 Liquids Pipelines In Additions To Plant

Rank 90	Rank 91	Name Of Company	1990 Additions To Plant ($000)
—	1	ARCO Pipe Line Co.	78,337
5	2	Phillips Pipe Line Co.	67,194
1	3	All American Pipeline Co.	40,741
9	4	BP Pipelines (Alaska) Inc.	40,537
4	5	Williams Pipe Line Co.	35,980
8	6	Exxon Pipeline Co.	34,923
—	7	Amoco Pipeline Co.	30,628
—	8	Lakehead Pipe Line Co. Inc.	28,375
7	9	Texaco Pipeline Inc.	24,024
—	10	Cook Inlet Pipe Line Co.	19,687

The Top 10 Gas Utilities In Operating Revenues

Rank 90	Rank 91	Name Of Company	1990 Operating Revenues ($000)
1	1	Southern California Gas Co.	3,212,625
2	2	Pacific Gas & Electric Co.	2,434,021
3	3	Consolidated Gas Distribution Companies	1,425,252
5	4	Public Service Electric & Gas Co.	1,362,470
4	5	Northern Illinois Gas Co.	1,352,168
—	6	Arkla Inc.	1,319,200
6	7	Michigan Consolidated Gas Co.	1,152,931
7	8	Consumers Power Co.	1,057,134
9	9	Peoples Gas Light & Coke Co.	1,036,332
—	10	Atlanta Gas Light Co.	1,000,897

The Top 10 Gas Pipelines In Gas Moved For Others

Rank 90	Rank 91	Name Of Company	Gas Moved For Others MMcf	1990 Gas Throughput, MMcf	% Gas Moved For Others
1	1	Transcontinental Gas Pipe Line Corp.	693,984	3,046,361	55.6%
—	2	Tennessee Gas Pipeline Corp.	1,528,144	3,078,801	49.6%
3	3	Natural Gas Pipeline Co. of America	1,357,198	1,645,206	82.5%
4	4	El Paso Natural Gas Co.	1,249,408	3,999,310	31.2%
6	5	Columbia Gulf Transmission Co.	1,110,742	2,483,335	44.7%
5	6	ANR Pipeline Co.	1,093,261	2,141,390	51.1%
—	7	Columbia Gas Transmission Co.	790,085	1,965,946	40.2%
—	8	Panhandle Eastern Pipe Line Co.	730,345	970,067	75.3%
—	9	Texas Eastern Transmission Corp.	677,304	1,833,251	36.9%
9	10	Valero Transmission Co. LP	649,975	649,975	100.0%

The Top 10 Liquids Pipelines In Operating Revenues

Rank 90	Rank 91	Name Of Company	1990 Operating Revenues ($000)
1	1	BP Pipelines (Alaska) Inc.	1,297,888
2	2	Exxon Pipeline Co.	776,126
3	3	ARCO Pipe Line Co.	630,025
4	4	Colonial Pipeline Co.	527,136
7	5	Chevron Pipe Line Co.	215,705
5	6	Lakehead Pipe Line Co. Inc.	205,672
6	7	Amoco Pipeline Co.	199,822
8	8	Santa Fe Pacific Pipelines Inc.	192,868
9	9	Shell Pipe Line Corp.	191,071
10	10	Marathon Pipe Line Co.	158,661

The Top 10 Gas Pipelines In Operating Revenues

Rank 90	Rank 91	Name Of Company	1990 Operating Revenues ($000)
2	1	Texas Eastern Transmission Corp.	1,571,751
4	2	Natural Gas Pipeline Co. of America	1,556,028
—	3	Arkla Energy Resources	1,376,238
1	4	Tennessee Gas Pipeline Corp.	1,265,743
—	5	Transcontinental Gas Pipe Line Corp.	1,260,517
—	6	El Paso Natural Gas Co.	1,221,515
6	7	Northern Natural Gas Co.	1,152,307
9	8	Enron Intrastate Pipelines	1,118,536
5	9	CNG Transmission Corp.	1,066,759
7	10	ANR Pipeline Co.	1,032,799

The Top 10 Liquids Pipelines In Products Deliveries

Rank 90	Rank 91	Name Of Company	1990 Products Deliveries (000) Bbl
1	1	Colonial Pipeline Co.	665,269
2	2	Santa Fe Pacific Pipelines Inc.	326,503
3	3	Buckeye Pipe Line Co. LP	279,158
4	4	Marathon Pipe Line Co.	269,968
5	5	Chevron Pipe Line Co.	251,490
6	6	Phillips Pipe Line Co.	189,869
7	7	Plantation Pipe Line Co.	177,778
9	8	Williams Pipe Line Co.	168,304
8	9	Explorer Pipeline Co.	150,397
10	10	Amoco Pipeline Co.	148,675

The Top 10 Gas Utilities In Gas Sold

Rank 90	Rank 91	Name Of Company	1990 Gas Sales, MMcf
1	1	Pacific Gas & Electric Co.	730,489
2	2	Southern California Gas Co.	515,757
10	3	Lone Star Gas Co.	480,212
3	4	Northern Illinois Gas Co.	292,762
—	5	Arkla Inc.	271,700
4	6	Consolidated Gas Distribution Companies	267,702
7	7	Public Service Electric & Gas Co.	247,877
8	8	Consumers Power Co.	216,292
9	9	Michigan Consolidated Gas Co.	198,566
—	10	Atlanta Gas Light Co.	170,636

The Top 10 Liquids Pipelines In Crude Oil Deliveries

Rank 90	Rank 91	Name Of Company	1990 Crude Oil Deliveries (000) Bbl
1	1	Alyeska Pipeline Service Co.	636,179
2	2	Lakehead Pipe Line Co. Inc.	447,039
3	3	Shell Pipe Line Corp.	419,032
7	4	Texaco Pipeline Inc.	411,264
4	5	ARCO Pipe Line Co.	409,031
5	6	Exxon Pipeline Co.	400,500
6	7	Marathon Pipe Line Co.	373,662
8	8	Chevron Pipe Line Co.	346,780
9	9	BP Pipelines (Alaska) Inc.	338,877
10	10	Amoco Pipeline Co.	331,928

The Top 10 Gas Pipelines In Gas Throughput

Rank 90	Rank 91	Name Of Company	Gas Throughput MMcf
8	1	El Paso Natural Gas Co.	3,999,310
1	2	Northern Natural Gas Co.	3,691,470
3	3	Tennessee Gas Pipeline Corp.	3,078,801
2	4	Transcontinental Gas Pipe Line Corp.	3,046,361
—	5	Columbia Gulf Transmission Co.	2,483,335
5	6	ANR Pipeline Co.	2,141,390
9	7	Columbia Gas Transmission Co.	1,965,946
7	8	Texas Eastern Transmission Corp.	1,833,251
4	9	Natural Gas Pipeline Co. of America	1,645,206
10	10	Southern Natural Gas Co.	1,164,166

Footnotes

A = Fiscal Year ended 5/31/90
B = FY ended 6/30/90
C = FY ended 7/31/90
D = FY ended 8/31/90
E = FY ended 9/30/90
F = FY ended 10/31/90
G = FY ended 11/30/90
H = FY ended 1/31/91
I = FY ended 3/31/91
J = FY ended 5/31/91
K = Includes Arkansas Louisiana Gas, Entex and Minnegasco
L = Includes Texas Eastern Products Pipeline, Trans-Ohio and Allegheny Pipeline

The 300 Leading Gas Distribution Utilities

The P&GJ 500 . . . dimensions of the pipeline energy business

Rank 90	Rank 91	Name Of Company	Number Of Customers	1990 Gas Sales MMcf	1990 Financial Operating Revenues $(000)	1990 Financial Operating Income $(000)	Gas Plant Net Value $(000) 12-31-90	1990 Additions To Plant $(000)	Miles Of Mains	Miles Of Services
1	1	Southern California Gas Co.	4,602,000	515,757	3,212,625	177,744	2,892,551	364,583	41,392	41,055
2	2	Pacific Gas & Electric Co.	3,450,041	730,489	2,434,021	273,572	1,629,684	462,681	37,972	2,610
18	3	Arkla Inc.[h]	2,638,835	271,700	1,319,200	137,900	1,125,459	76,600	52,340	13,253
4	4	Consolidated Gas Distribution Companies	1,717,611	267,702	1,425,252	120,900	1,003,941	119,900	29,275	0
3	5	Northern Illinois Gas Co.	1,688,454	292,762	1,352,168	122,825	1,403,557	120,270	26,145	22,353
5	6	**Public Service Electric & Gas Co.**	**1,519,000**	**247,877**	**1,362,470**	**122,854**	**1,021,774**	**121,611**	**14,071**	**13,571**
6	7	**Consumers Power Co.**	**1,361,948**	**216,292**	**1,057,134**	**85,714**	**867,899**	**48,364**	**21,102**	**0**
8	8	**Lone Star Gas Co.**	**1,248,275**	**480,212**	**930,912**	**53,438**	**465,257**	**28,453**	**22,856**	**6,435**
9	9	**Atlanta Gas Light Co.[g]**	**1,193,073**	**170,636**	**1,000,897**	**93,124**	**1,033,045**	**122,802**	**25,987**	**20,360**
10	10	**Columbia Gas of Ohio Inc.**	**1,180,716**	**164,587**	**835,518**	**83,296**	**550,641**	**61,900**	**15,790**	**0**
11	11	Brooklyn Union Gas Co.[f]	1,106,172	117,872	993,859	93,268	987,027	98,987	3,917	5,390
12	12	Michigan Consolidated Gas Co.	1,105,153	198,566	1,152,931	64,787	882,649	99,788	13,721	14,569
13	13	KPL Gas Service	1,059,140	165,100	686,048	24,120	578,279	85,617	16,811	7,061
14	14	Consolidated Edison Co. of New York Inc.	1,026,152	97,157	694,461	66,920	783,384	70,390	4,114	2,428
15	15	Public Service Co. of Colorado	865,399	153,838	561,712	34,628	518,218	89,066	13,600	0
16	16	**Peoples Gas Light & Coke Co.[g]**	**843,202**	**167,595**	**1,036,332**	**90,036**	**1,008,624**	**9,157**	**4,008**	**5,271**
17	17	**Southwest Gas Corp.**	**827,783**	**90,884**	**518,969**	**70,714**	**777,105**	**86,971**	**16,795**	**10,110**
19	18	**National Fuel Gas Distribution Corp.[g]**	**691,854**	**119,128**	**712,597**	**58,117**	**631,939**	**42,380**	**14,266**	**13,223**
20	19	**San Diego Gas & Electric Co.**	**673,481**	**59,400**	**355,069**	**37,371**	**344,763**	**44,675**	**6,313**	**5,129**
22	20	**Oklahoma Natural Gas Co.[b]**	**652,127**	**165,691**	**565,922**	**37,769**	**343,817**	**35,142**	**11,785**	**1,493**
23	21	Washington Gas Light Co.[g]	651,732	129,661	724,928	75,665	769,784	89,577	8,050	9,212
24	22	Northern Indiana Public Service Co.	594,927	107,513	625,159	67,692	624,236	41,087	12,176	11,443
25	23	Laclede Gas Co.[g]	581,157	90,844	470,824	31,992	316,278	29,211	6,832	6,476
26	24	UtiliCorp United Inc.	570,814	113,424	503,908	35,161	530,432	50,860	2,616	14,652
28	25	Atmos Energy Corp.[f]	531,000	86,543	341,595	18,297	197,405	26,793	16,152	2,717
27	26	**Philadelphia Gas Works**	**529,630**	**69,107**	**439,711**	**50,312**	**647,929**	**58,195**	**3,009**	**3,629**
29	27	**Baltimore Gas & Electric Co.**	**520,034**	**63,392**	**373,419**	**30,654**	**400,465**	**52,869**	**4,419**	**2,519**
31	28	**Mountain Fuel Supply Co.**	**503,317**	**111,759**	**364,747**	**32,926**	**370,680**	**28,080**	**9,179**	**6,004**
30	29	**Boston Gas Co.**	**500,000**	**0**	**559,692**	**47,623**	**477,792**	**40,670**	**5,704**	**4,195**
32	30	**Niagara Mohawk Power Corp.**	**468,874**	**78,618**	**485,411**	**50,446**	**537,787**	**52,646**	**6,910**	**4,800**
33	31	Wisconsin Gas Co.	452,906	91,065	455,559	26,731	134,154	27,978	6,744	0
34	32	Long Island Lighting Co.	430,571	55,392	361,242	30,487	405,434	47,905	6,047	4,900
36	33	Alabama Gas Corp.[f]	417,475	89,137	310,959	16,699	204,867	19,565	8,000	8,500
37	34	Piedmont Natural Gas Co.[f]	415,000	80,030	403,815	43,936	488,210	71,246	9,430	7,974
35	35	Southern Union Gas Co.	407,139	43,317	192,905	387	323,187	7,500	7,021	3,257
46	36	**Cincinnati Gas & Electric Co.**	**399,979**	**69,492**	**305,665**	**-5,231**	**360,552**	**61,048**	**4,985**	**1,053**
38	37	**Illinois Power Co.**	**398,891**	**55,516**	**311,070**	**32,094**	**478,625**	**24,537**	**7,468**	**4,711**
42	38	**Midwest Gas**	**365,061**	**58,948**	**264,133**	**15,817**	**237,720**	**26,685**	**5,903**	**5,057**
41	39	**Northern States Power Co.**	**358,155**	**73,893**	**315,457**	**0**	**420,900**	**33,200**	**5,272**	**4,120**
40	40	**Columbia Gas of Pennsylvania**	**354,646**	**48,335**	**296,471**	**33,860**	**279,472**	**22,477**	**6,355**	**0**
45	41	Washington Natural Gas Co.	348,633	74,181	292,578	48	561,707	81,265	7,318	7,365
43	42	Philadelphia Electric Co.	347,287	51,876	385,029	29,040	511,680	34,935	4,943	3,923
39	43	Indiana Gas Co. Inc.	343,722	86,805	344,577	31,288	341,509	38,408	7,802	5,716
44	44	Gas Co. of New Mexico	339,157	46,254	282,827	24,913	250,867	20,468	2,044	1,680
48	45	Northwest Natural Gas Co.	319,785	45,825	296,281	44,353	485,260	25,824	8,875	4,814
47	46	**K N Energy Inc.**	**310,000**	**79,600**	**321,753**	**42,483**	**346,629**	**29,542**	**3,407**	**1,105**
49	47	**New Jersey Natural Gas Co.**	**307,729**	**47,304**	**295,384**	**24,110**	**408,851**	**49,873**	**5,180**	**4,511**
50	48	**City Public Service of San Antonio[d]**	**284,671**	**24,296**	**107,140**	**19,804**	**172,507**	**11,718**	**3,840**	**3,207**
51	49	**Dayton Power & Light Co.**	**276,411**	**56,311**	**238,138**	**0**	**121,900**	**6,900**	**3,912**	**760**
52	50	**Equitable Gas Co.**	**267,238**	**56,568**	**305,040**	**26,938**	**351,858**	**26,239**	**3,342**	**3,342**

The 300 Leading Gas Distribution Utilities

The P&GJ 500 . . . dimensions of the pipeline energy business

Rank 90	Rank 91	Name Of Company	Number Of Customers	1990 Gas Sales MMcf	1990 Financial Operating Revenues $(000)	1990 Financial Operating Income $(000)	Gas Plant Net Value $(000) 12-31-90	1990 Additions To Plant $(000)	Miles Of Mains	Miles Of Services
54	51	United Cities Gas Co.	265,534	46,301	220,396	13,522	206,352	30,042	4,575	3,483
53	52	Memphis Light, Gas & Water Div.	265,080	62,505	159,092	11,743	143,043	11,150	3,417	2,250
56	53	Wisconsin Natural Gas Co.	263,763	41,131	222,331	15,033	190,348	16,435	4,824	3,472
55	54	Rochester Gas & Electric Corp.	261,516	34,863	236,496	18,171	211,655	19,094	3,975	3,115
58	55	Bay State Gas Co.	260,276	60,053	353,329	29,859	322,027	46,844	3,778	3,797
57	56	Louisville Gas & Electric Co.	246,556	37,709	169,370	9,897	129,115	11,416	3,325	1,297
59	57	Citizens Gas & Coke Utility	237,993	37,278	192,703	8,228	323,087	49,487	3,278	4,422
60	58	Louisiana Gas Service Co.[E]	234,489	18,085	112,572	4,645	111,440	6,272	4,250	3,042
64	59	Public Service Co. of N.C. Inc.	233,769	38,467	194,076	21,692	281,236	37,955	4,969	4,920
61	60	Mississippi Valley Gas Co.[E]	232,867	42,600	168,645	7,449	70,222	5,347	4,569	3,773
62	61	Iowa-Illinois Gas & Electric Co.	231,914	40,981	194,296	8,927	113,870	10,754	3,973	3,012
65	62	Elizabethtown Gas Co.	226,000	40,165	250,743	14,470	219,593	17,057	2,477	1,485
63	63	Commonwealth Gas Co.	224,116	39,860	252,145	8,257	211,253	27,069	2,672	1,835
66	64	UGI Corp.	223,682	33,713	251,851	33,427	327,536	38,294	3,710	2,297
67	65	South Jersey Gas Co.	217,636	42,109	210,282	26,763	325,306	31,841	4,477	3,571
68	66	South Carolina Electric & Gas Co.	206,032	24,859	147,794	12,376	169,715	15,496	4,833	4,714
69	67	Mountaineer Gas Co.[B]	198,287	25,412	158,768	6,286	162,323	6,564	3,659	565
70	68	Central Illinois Light Co.	190,306	24,769	138,365	12,591	173,378	12,761	2,615	2,948
72	69	Montana-Dakota Utilities Co.	177,500	26,826	127,844	5,048	59,380	4,643	3,612	2,573
71	70	Yankee Gas Services Co.[E]	177,341	33,057	222,716	18,273	277,424	24,399	2,613	2,087
73	71	Wisconsin Public Service Corp.	176,429	28,968	140,068	6,374	79,349	8,954	3,130	2,490
74	72	Peoples Gas System Inc.	173,630	46,914	212,628	16,250	177,681	34,935	5,003	3,485
78	73	Virginia Natural Gas	168,820	23,934	108,723	9,855	188,827	31,662	3,027	3,009
75	74	Central Illinois Public Serv. Co.	158,115	19,518	103,552	1,978	165,456	8,313	2,859	2,059
76	75	New Orleans Public Service Inc.	156,499	17,365	88,098	-301	58,307	3,025	1,461	1,101
127	76	Providence Gas Co.[E]	151,786	21,876	145,509	9,302	130,296	10,162	2,178	1,472
77	77	Southern Connecticut Gas Co.[E]	148,854	22,663	174,222	18,447	189,108	23,063	1,979	2,182
80	78	Metropolitan Utilities District of Omaha	148,783	28,741	110,875	3,396	98,364	9,036	1,890	0
79	79	Arkansas Western Gas Co.	147,659	26,593	108,911	8,661	86,944	9,301	3,900	1,300
81	80	Long Beach Gas Dept.[B]	147,300	25,736	127,220	-611	37,884	1,445	908	930
82	81	New York State Electric & Gas Corp.	146,037	24,996	162,271	14,495	154,613	14,939	4,102	460
83	82	Connecticut Natural Gas Corp.	140,618	31,555	202,021	19,415	173,121	19,450	1,772	1,616
84	83	Commonwealth Gas Services Inc.	133,514	23,788	124,938	7,408	125,395	15,825	3,048	0
85	84	Pennsylvania Gas & Water Co.	129,082	38,546	135,185	17,629	449,229	14,127	2,042	1,194
88	85	Wisconsin Power & Light Corp.	124,698	21,435	110,423	10,527	96,929	8,389	2,345	0
89	86	Michigan Gas Utilities Co.	123,257	22,955	111,137	9,381	101,746	9,013	2,798	2,109
87	87	Columbia Gas Of Kentucky Inc.	123,166	15,567	88,284	9,217	74,187	9,721	2,016	0
86	88	IE Industries Inc.	122,540	25,745	101,662	6,904	46,050	2,963	2,110	1,856
94	89	Colonial Gas Co.	118,925	20,418	139,892	14,331	121,034	13,480	2,215	1,270
90	90	Colorado Springs Dept. Pub. Util.	118,340	17,585	77,968	9,385	90,315	6,492	1,575	0
91	91	North Shore Gas Co.[I]	118,279	24,439	130,801	12,937	125,409	11,673	1,853	1,843
95	92	Intermountain Gas Co.[I]	113,914	13,335	73,639	9,589	73,987	7,217	3,314	2,153
93	93	Montana Power Co.	113,647	29,766	109,350	23,704	234,354	11,474	2,400	2,305
92	94	Union Electric Co.	112,170	13,716	80,310	4,689	86,786	9,441	2,499	0
96	95	North Carolina Natural Gas Corp.[I]	109,716	29,216	131,353	10,126	114,095	16,083	3,122	1,754
98	96	Cascade Natural Gas Corp.	106,933	47,740	160,515	16,301	136,945	15,904	3,372	1,807
97	97	Orange & Rockland Utilities Inc.	105,528	20,087	117,711	8,602	101,747	12,370	1,618	1,389
99	98	Southern Indiana Gas & Elect. Co.	95,488	14,012	62,719	20,203	54,802	6,546	2,386	1,833
102	99	Washington Water Power Co.	91,253	17,266	60,882	9,577	77,019	8,426	2,523	1,730
100	100	City Gas of Florida	91,225	7,467	40,222	3,616	69,049	5,554	2,075	1,138

The 300 Leading Gas Distribution Utilities

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101	101	Greeley Gas Co.	90,771	13,989	58,024	5,605	49,746	5,572	3,224	1,302
104	102	Madison Gas & Electric Co.	87,832	15,065	80,075	6,985	75,727	6,416	1,582	1,535
103	103	Mobile Gas Service Corp.	87,156	7,789	44,580	3,608	51,298	4,640	1,526	1,814
105	104	Delmarva Power & Light Co.	85,044	16,069	79,836	7,263	98,992	16,176	1,291	1,146
0	105	Michigan Gas Co.	84,714	17,174	75,300	1,614	92,755	1,477	1,788	1,417
106	106	**Gulf States Utilities Co.**	**83,164**	**6,339**	**32,478**	**0**	**0**	**0**	**1,429**	**1,176**
107	107	**Enstar Natural Gas Co.**	**81,267**	**40,194**	**121,237**	**27,067**	**174,636**	**7,802**	**1,570**	**1,215**
109	108	**Southeastern Michigan Gas Co.**	**79,006**	**12,936**	**61,523**	**5,739**	**64,429**	**4,685**	**1,520**	**0**
108	109	**Richmond Public Utilities[B]**	**78,900**	**13,861**	**78,276**	**8,371**	**88,159**	**14,846**	**1,240**	**1,216**
110	110	**Westpac Utilities**	**77,339**	**9,738**	**51,908**	**4,135**	**65,644**	**10,041**	**816**	**0**
113	111	CP National Corp.	71,503	8,476	42,909	6,799	52,942	5,639	1,522	907
111	112	Rio Grande Valley Gas Co.	71,252	5,422	25,618	638	19,780	1,546	1,503	265
112	113	Columbia Gas Of New York Inc.	68,905	10,506	55,806	4,887	42,574	4,081	879	0
114	114	Northwestern Public Service Co.	67,203	12,716	50,372	1,751	22,119	2,077	1,176	1,080
115	115	Gasco Inc.[A]	66,253	5,356	65,036	8,110	61,792	1,811	612	548
117	116	**Union Light, Heat & Power Co.**	**64,643**	**11,575**	**57,011**	**7,279**	**63,702**	**9,711**	**855**	**168**
118	117	**Springfield City Utilities[F]**	**62,694**	**11,012**	**46,175**	**2,976**	**36,612**	**2,632**	**912**	**884**
0	118	**Associated Natural Gas Co.**	**62,673**	**8,553**	**39,776**	**0**	**0**	**0**	**1,372**	**0**
119	119	**EnergyNorth Inc.[E]**	**59,074**	**10,079**	**70,077**	**3,995**	**80,801**	**11,225**	**917**	**475**
121	120	**Arkansas Oklahoma Gas Corp.**	**55,970**	**12,308**	**43,602**	**1,851**	**45,645**	**5,208**	**1,371**	**372**
120	121	Corpus Christi Gas Division, City of	55,471	4,271	23,199	2,511	19,582	160	1,155	244
122	122	Central Hudson Gas & Electric Corp.	54,943	11,461	54,943	817	43,291	4,640	700	161
123	123	T. W. Phillips Gas & Oil Co.	53,399	18,442	73,486	8,784	85,408	11,359	3,126	0
124	124	Valley Resources Inc.[D]	52,397	7,170	45,206	3,321	30,885	2,647	530	361
125	125	Interstate Power Co.	46,511	18,230	51,094	1,480	29,053	3,445	846	0

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The 300 Leading Gas Distribution Utilities

The P&GJ 500 . . . dimensions of the pipeline energy business

Rank 90	Rank 91	Name Of Company	Number Of Customers	1990 Gas Sales MMcf	1990 Financial: Operating Revenues $(000)	1990 Financial: Operating Income $(000)	Gas Plant Net Value $(000) 12-31-90	1990 Additions To Plant $(000)	Miles Of Mains	Miles Of Services
126	126	Fall River Gas Co.	45,792	6,725	59,996	1,925	26,923	5,081	694	570
129	127	Wisconsin Southern Gas Co. Inc.	44,467	6,829	37,341	1,369	22,304	4,150	1,173	831
128	128	Roanoke Gas Co.	43,777	9,067	44,882	2,782	26,312	5,632	873	889
131	129	Wisconsin Fuel & Light Co.	42,509	8,735	40,718	1,853	20,354	2,900	952	603
130	130	Energy Services of Pensacola[f]	42,158	3,347	27,321	0	0	0	1,109	736
132	131	Chattanooga Gas Co.[g]	40,489	10,864	51,099	4,840	59,765	7,602	1,082	799
133	132	Iowa Southern Utilities Co.	38,449	6,710	28,261	389	21,097	2,379	657	357
134	133	Essex County Gas Co.[D]	37,700	5,539	37,661	4,754	52,433	5,826	660	360
142	134	Knoxville Utilities Board	35,863	7,493	35,811	4,210	55,795	9,515	1,047	687
136	135	Austell Natural Gas System	35,514	3,286	17,074	0	24,804	0	707	644
138	136	Ohio Gas Co.	34,641	5,579	32,858	0	0	0	897	595
135	137	Florida Public Utilities Co.	34,140	5,430	23,143	867	32,103	2,253	914	0
137	138	Terre Haute Gas Corp.	33,512	8,604	33,699	618	23,835	1,512	784	150
139	139	Battle Creek Gas Co.	33,206	5,602	32,272	3,781	31,755	3,050	575	0
141	140	North Penn Gas Co.	32,829	5,301	36,751	5,309	46,587	5,601	1,698	554
144	141	Berkshire Gas Co.[B]	30,783	6,314	40,128	7,471	83,414	10,131	631	377
143	142	Southeast Alabama Gas District[f]	30,757	8,817	35,138	4,521	0	2,131	894	869
164	143	Penn Fuel Gas Inc.	30,259	11,540	53,429	0	0	0	988	212
147	144	Huntsville Utilities Gas System[g]	30,059	5,927	23,517	0	45,678	6,938	[illegible]	450
146	145	Columbia Gas of Maryland Inc.	29,967	4,174	24,717	3,857	27,281	3,098	[illegible]	0
140	146	Kokomo Gas & Fuel Co.	29,717	7,529	31,336	0	0	0	[illegible]	498
145	147	Delta Natural Gas Co. Inc.	28,687	3,743	25,684	2,383	37,071	5,829	1,359	0
149	148	Chesapeake Utilities Corp.	28,464	10,822	46,839	3,300	28,881	2,294	424	511
148	149	Great Falls Gas Co.	27,645	6,214	25,138	167	14,621	444	555	355
150	150	Ohio Valley Gas Corp.	26,038	5,506	19,132	911	12,521	1,148	725	575
152	151	Northern Indiana Fuel & Light Co. Inc.	25,291	4,025	20,559	2,523	22,052	588	676	480
151	152	Cheyenne Light Fuel & Power Co.	25,210	4,985	16,049	936	11,246	985	459	0
158	153	Middle Tennessee Natural Gas Util. Dist.[f]	24,961	4,078	18,353	159	37,883	9,523	1,241	792
153	154	West Florida Natural Gas Co.	23,873	3,245	16,084	0	0	0	675	531
155	155	Palo Alto Utilities, City of[B]	22,998	3,797	17,454	3,381	18,919	266	180	130
154	156	Mesa, City of	22,992	2,710	17,234	3,621	24,530	1,180	652	270
159	157	Okaloosa County Gas District	22,617	2,366	13,820	1,552	14,712	2,824	722	596
156	158	Hamilton Municipal Utilities	22,231	3,429	18,086	0	18,482	5,265	226	262
157	159	Duluth Dept. of Water & Gas, City of	21,766	5,317	22,501	2,104	30,893	1,250	423	210
162	160	National Gas & Oil Corp.	21,652	4,079	27,255	3,472	26,193	4,246	1,045	42
163	161	Wilmut Gas & Oil Co.[g]	20,926	3,742	14,253	709	6,149	1,146	588	98
161	162	Vermont Gas Systems, Inc.	20,891	6,108	27,550	1,846	25,910	5,294	301	239
166	163	Las Cruces Gas System, City of	19,145	1,957	8,844	0	0	0	404	168
167	164	Gainesville Gas Co.	18,922	3,118	12,443	806	9,061	0	392	243
165	165	Albany Water, Gas & Light Commission	18,752	1,682	2,242	490	2,308	95	349	458
168	166	Brazos River Gas Co.[f]	18,500	1,899	8,826	418	5,302	447	542	65
169	167	Jackson Utility Division	18,143	3,393	15,100	768	17,101	4,071	382	335
170	168	Great Plains Natural Gas Co.	18,076	4,132	17,666	851	8,052	643	376	297
172	169	Pennsylvania & Southern Gas Co.	17,870	6,391	25,622	2,883	10,803	706	479	392
160	170	Alexandria Gas Dept., City of	17,620	2,028	11,546	0	0	0	494	230
173	171	Pt. Hill Natural Gas Authority[F]	17,201	4,302	17,959	0	0	0	560	485
171	172	Citizens Utilities Co.	16,809	2,660	11,505	250	554,447	1,000	482	50
174	173	Trussville Utilities Board	15,996	1,912	11,927	2,026	27,669	1,078	336	251
175	174	Fitchburg Gas & Electric Light Co.	15,775	2,712	17,679	1,788	21,266	1,774	303	171
176	175	Danville Water Gas & Electric Dept.	15,546	4,982	20,516	3,696	597	266	197	195

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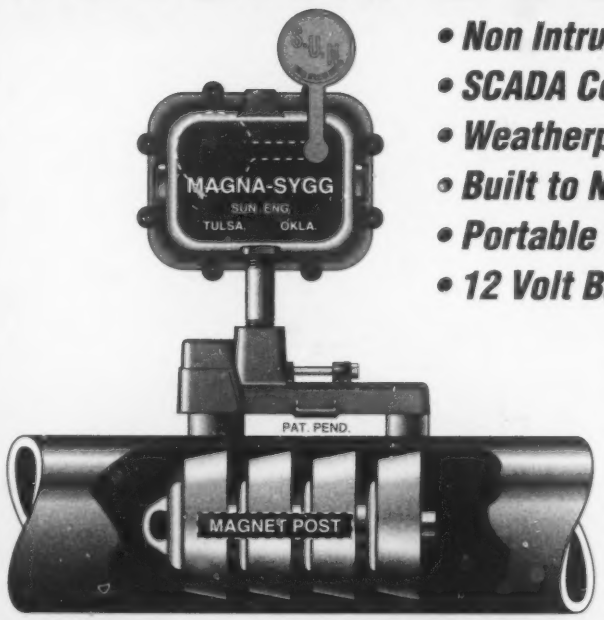
177	176	Moran Utilities Co.	15,024	1,836	7,776	1,025	5,254	526	591	29
178	177	Palm Beach County Utilities Corp.	14,569	1,032	6,846	2,431	12,587	465	244	171
179	178	Richmond Gas Corp.	13,701	3,822	15,155	1,425	12,122	1,565	252	168
184	179	Marshall County Gas District[1]	13,443	4,001	14,840	536	14,153	296	448	780
183	180	Charlottesville Public Works, City of[2]	13,424	2	14,100	0	0	300	251	153
181	181	Lancaster Municipal Gas Co	13,305	2,013	9,602	0	0	0	301	37
182	182	Corning Natural Gas Corp.	12,760	3,062	17,442	624	12,654	2,260	362	95
185	183	NE Okla. Public Facilities Authority	12,452	1,466	1,994	1,372	700	0	112	421
196	184	Midwest Energy Inc.	12,153	3,747	13,761	364	3,165	312	874	150
186	185	Warner Robins, City of	12,007	2,997	8,374	7	5,362	0	194	115
187	186	St. Lawrence Gas Co.	11,985	8,196	28,983	1,457	10,007	856	266	0
188	187	Lawrenceville Natural Gas System	11,758	1,256	7,643	2,856	674	0	241	210
189	188	Citizens Gas Fuel Co.	11,495	2,843	14,505	1,465	8,927	601	258	212
195	189	Rocky Mount, City of[3]	11,465	2,710	0	0	0	0	165	216
191	190	Greenwood Commission of Public Works	11,207	2,020	12,650	2,052	8,638	333	329	224
190	191	Midwest Natural Gas Corp.	11,183	1,711	8,800	1,527	7,840	1,611	387	181
192	192	Hobbs Gas Co.	11,131	1,246	6,260	579	4,619	243	78	26
193	193	Holyoke Gas & Electric Dept., City of	11,068	2,401	11,744	291	7,219	650	153	78
194	194	Clinton-Newberry Gas Authority	11,000	2,342	12,222	0	20,000	1,000	1,500	191
204	195	Florence Gas Dept., City of	10,574	0	0	0	0	0	301	220
198	196	Clearwater Gas System[3]	10,036	1,363	9,350	1,462	10,457	815	417	263
199	197	Cedar Falls Utilities	10,034	1,788	7,876	789	8,684	480	157	115
197	198	Hastings Utilities	9,990	16	378	0	0	0	135	162
200	199	Peoples Natural Gas Co. of S.C.	9,659	3,585	16,622	1,022	10,472	1,308	352	262
201	200	Austin Utilities	9,632	2,084	8,219	0	0	0	140	107

MAGNA-SYGG™ Pipeline Pig Detector From S.U.N. Engineering, Inc.



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- *Portable or Permanent Mount*
- *12 Volt Battery Pack or 24 Volt Connection*

MAGNA-SYGG™ readily adapts to mobile field operations and permanent installations. Used in conjunction with S.U.N. Engineering's Super Pigs, the compact and rugged MAGNA-SYGG™ Detector significantly reduces overall time, labor and material costs associated with today's pipeline pigging, inspection and maintenance operations.

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Circle 113

The 300 Leading Gas Distribution Utilities

The P&GJ 500 . . . dimensions of the pipeline energy business

Rank 90	Rank 91	Name Of Company	Number Of Customers	1990 Gas Sales MMcf	1990 Financial: Operating Revenues $(000)	1990 Financial: Operating Income $(000)	Gas Plant Net Value $(000) 12-31-90	1990 Additions To Plant $(000)	Miles Of Mains	Miles Of Services
212	201	Tallahassee Municipal Gas System[I]	9,509	1,428	9,779	2,798	15,395	2,213	317	196
203	202	Illinois Gas Co.	9,498	1,163	6,139	410	4,560	618	313	124
206	203	Superior Water, Light & Power Co.	9,467	1,827	8,339	191	7,785	329	131	126
205	204	Henderson Municipal Gas System[B]	9,177	2,066	8,689	658	4,937	116	171	106
207	205	Norco Gas & Fuel Co. Inc.[B]	8,822	973	4,525	215	2,753	77	220	46
208	206	**Orangeburg Public Utilities[E]**	8,801	1,364	7,146	1,187	5,049	179	217	98
214	207	**Leesburg, City of**	8,507	937	0	0	0	0	204	157
210	208	**Rio Grande Natural Gas Association**	8,421	832	3,712	0	0	0	484	161
0	209	**City of Sunrise**	8,338	331	2,785	70	10,400	680	143	95
222	210	**Wes. Penn. Public Util. Dist.**	8,325	2,394	8,424	2,517	8,148	1,410	500	237
211	211	Dalton Utilities, City of Dalton, Ga.[C]	8,319	4,473	0	0	0	0	207	0
218	212	Clarksville Gas Department[B]	8,156	5,266	0	0	0	0	544	224
213	213	Southern Public Service Co.	7,995	727	5,205	599	2,380	257	150	50
215	214	Northwest Alabama Gas District	7,768	6,268	17,179	1,619	14,067	116	650	556
216	215	Vicksburg Water & Gas Admin.	7,666	1,214	6,575	0	5,789	0	14,124	0
219	216	**Consumers Gas Utility Co.**	7,649	790	4,601	391	896	322	276	124
217	217	**Lake Apopka Natural Gas Dist.[E]**	7,617	10,511	4,947	197	2,485	97	299	132
209	218	**La Grange Gas Dept., City of**	7,614	1,858	2,985	2,993	2,233	329	160	175
223	219	**Owatonna Public Utilities**	7,536	1,682	7,526	930	7,929	1,773	122	88
221	220	**Norwich Dept. of Public Utilities[B]**	7,463	1,150	9,072	-148	5,264	384	114	43
224	221	Westfield Gas & Electric Light Dept.	7,247	1,067	7,766	612	5,648	685	159	78
227	222	Wilson, City of[G]	7,006	943	5,440	1,414	3,567	386	145	0
225	223	Graysville Municipal Gas System[I]	7,000	464	3,528	526	4,500	0	155	30
0	224	Dyersburg Municipal Gas System	6,995	1,700	0	0	0	0	0	0
226	225	Cullman-Jefferson Counties Gas Dist.	6,938	1,500	7,000	0	0	0	350	200
228	226	**Los Alamos County Utilities[B]**	6,896	1,078	3,851	-149	3,921	76	104	65
236	227	**Decatur Utilities Gas Dept.**	6,860	3,498	13,191	460	12,270	790	258	147
252	228	**Greenville Utilities Commission[B]**	6,823	1,468	8,220	1,422	5,856	802	201	116
249	229	**Elk River Public Utility Dist.[B]**	6,802	2,012	8,941	843	8,790	1,540	313	144
233	230	**Cartersville Gas Dept., City of[B]**	6,800	1,130	10,700	1,750	0	1,200	250	90
254	231	Lancaster County Gas Authority[B]	6,700	1,845	7,828	1,135	15,000	1,200	525	179
230	232	Oak Ridge Utility District	6,667	862	4,554	889	7,864	1,401	199	119
231	233	Wyoming Gas Co.	6,632	7,000	6,400	0	0	0	153	95
234	234	Watertown Municipal Utilities	6,572	1,237	4,892	621	2,286	222	137	127
232	235	Del Rio Gas System, City of	6,538	325	0	0	0	0	186	112
235	236	**Fultondale Gas Board**	6,310	418	1,809	3,339	0	147	162	100
246	237	**Powell Clinch Utility District[B]**	6,240	880	4,715	388	7,550	1,164	230	181
242	238	**Bristol & Warren Gas Co.[D]**	6,240	725	5,254	313	3,175	299	98	53
220	239	**Pascagoula Utilities**	6,207	800	5,000	5,020	4,000	900	240	76
239	240	**Elizabethtown Natural Gas**	6,187	1,014	4,621	23	3,446	51	151	102
241	241	St. Joseph Light & Power Co.	6,145	850	5,294	554	4,845	136	189	0
237	242	Dixie Gas Co. Inc.[B]	6,130	488	2,510	51	2,257	44	205	36
238	243	Covington Natural Gas System, City of	6,090	972	4,985	432	6,000	24	214	108
245	244	Pike Natural Gas Co.[I]	5,880	900	5,059	0	2,345	120	174	20
243	245	Union Gas Co.	5,844	885	3,869	0	0	0	175	125
244	246	**Consumers Gas Co.**	5,818	1,080	4,589	0	0	0	88	102
248	247	**Sylacauga Utilities Board**	5,762	1,519	5,975	1,197	3,707	316	422	106
247	248	**Bay City Gas Co.**	5,720	458	2,459	0	0	0	178	119
253	249	**Utah Gas Service Co.**	5,472	352	4,000	0	0	0	57	4
250	250	**Carnegie Natural Gas Co.**	5,461	14,213	47,213	337	50,809	4,441	92	70

The 300 Leading Gas Distribution Utilities

The P&GJ 500 . . . dimensions of the pipeline energy business

Rank 90	Rank 91	Name Of Company	Number Of Customers	1990 Gas Sales MMcf	1990 Financial: Operating Revenues $(000)	1990 Financial: Operating Income $(000)	Gas Plant Net Value $(000) 12-31-90	1990 Additions To Plant $(000)	Miles Of Mains	Miles Of Services
255	251	Shelby Gas Dept., City of	5,404	1,155	15,829	2,259	0	0	240	100
257	252	Indiana Natural Gas Corp.[J]	5,365	709	3,731	238	2,885	185	178	50
0	253	Citizens Gas Utility District	5,334	529	3,185	0	0	0	440	251
251	254	Moss Point Utilities, City of	5,312	352	0	0	0	0	57	48
256	255	Wakefield Municipal Light Dept.	5,142	980	5,515	50	1,388	191	72	16
0	256	City of Union[I]	5,095	1,426	4,998	661	5,724	0	177	97
259	257	Lexington Natural Gas Dept., City of	5,057	2,676	9,112	1,659	0	175	166	88
264	258	Milton Natural Gas System, City of	5,006	550	2,800	0	0	0	192	122
261	259	New Ulm Public Utilities Commission	4,980	2,440	6,128	0	0	0	71	95
260	260	Suburban Fuel Gas Inc.	4,933	1,050	55,314	5	3,120	0	250	0
262	261	Winfield, City of	4,929	752	3,507	0	8,425	0	82	25
258	262	Fairhope Gas Department, City of	4,781	490	1,156	0	0	0	87	265
273	263	Westlake Municipal Natural Gas	4,718	251	1,614	0	0	0	91	30
263	264	Dumas, City of	4,699	6,751	1,900	0	0	0	65	25
266	265	Canton Municipal Utilities	4,630	606	1,279	0	0	0	72	57
265	266	Polaris Corp.[B]	4,625	286	1,930	147	1,254	68	109	71
278	267	Community Natural Gas Co.[S]	4,614	644	3,043	379	2,753	245	201	107
272	268	Chanute Gas Dept., City of	4,612	758	2,500	0	0	100	89	55
268	269	Toccoa Natural Gas System	4,602	960	4,566	1,145	0	0	145	85
267	270	Ft. Pierce Utilities Authority	4,585	1,383	5,286	158	4,600	718	138	90
269	271	Palatka Gas Authority	4,556	224	1,455	921	1,582	57	91	77
274	272	Chambersburg Gas Dept., Borough of	4,548	985	4,052	267	2,807	246	59	50
270	273	Deming Gas System, City of	4,501	554	1,813	0	0	0	74	71
275	274	Syracuse Suburban Gas Co. Inc.	4,499	1,599	10,702	649	7,213	704	88	70
276	275	Thomasville Water & Light Dept.	4,392	577	5,491	422	1,275	0	141	157
277	276	Lawrenceburg Gas Co.	4,380	1,528	6,831	366	8,520	760	123	98
279	277	Denham Springs, City of	4,336	282	1,912	0	0	0	115	35
280	278	Commission of Public Works, Laurens, SC	4,240	1,007	5,000	0	7,000	251	228	63
281	279	Morton Utilities	4,188	1,053	3,545	0	0	0	84	65
282	280	Nebraska City Utilities[D]	4,072	686	3,342	571	4,244	0	96	60
0	281	Grey Forest Utilities	4,067	602	2,139	0	0	0	170	0
283	282	Thibodaux Gas System, City of	4,065	534	1,815	0	0	0	75	25
284	283	Summerville Natural Gas System	4,062	6,524	2,710	188	2,225	360	175	9
0	284	Corinth Gas & Water Dept.[T]	3,998	865	3,685	905	3,763	922	101	42
285	285	Ville Platte Gas System	3,975	3,934	2,250	0	0	0	86	38
286	286	Las Vegas Natural Gas System	3,950	974	3,665	0	0	0	60	33
287	287	Greer Public Works	3,938	2,233	7,391	1,948	4,715	2,400	234	87
0	288	Elberton Natural Gas System	3,863	582	0	0	0	0	113	0
291	289	Bluefield Gas Co.	3,822	924	4,203	0	0	0	77	24
292	290	Southwestern Virginia Gas Co.	3,787	923	4,378	141	5,438	312	127	78
294	291	Brownsville Utility Department	3,785	625	1,921	0	0	0	141	61
280	292	Zia Natural Gas Co.	3,742	440	1,763	0	0	0	105	60
296	293	Alexander Municipal Gas Co.	3,741	867	0	2,407	4,103	0	116	71
0	294	City Gas Co.	3,665	563	3,380	141	1,803	180	88	0
295	295	South Florida Gas Co.	3,650	516	1,630	0	2,072	65	103	71
0	296	Ft. Morgan Municipal Utilities	3,622	602	3,250	0	0	0	52	57
0	297	St. Croix Valley Natural Gas Co.	3,589	711	2,570	0	0	0	70	35
299	298	Dublin, City of	3,581	1,154	0	0	0	0	245	60
300	299	High Plains Natural Gas Co.	3,562	4,979	11,537	0	0	0	70	10
0	300	Moultrie Gas Department	3,520	608	2,771	0	0	0	178	85

The 100 Leading Gas Pipelines

The P&GJ 500 . . . dimensions of the pipeline energy business

Rank 90	Rank 91	Name Of Company	Miles of Gas Pipeline Operated Total	Transmission	Gathering	Storage	1990 Gas Throughput MMcf	1990 Gas Transported MMcf	1990 Oper. Revenues $(000)	1990 Oper. Income $(000)	Gas Plant Net Value $(000) 12-31-90	Additions To Plant 1990 $(000)
1	1	Northern Natural Gas Co.	23,582	23,371	0	211	3,691,470	0	1,152,307	95,991	764,448	39,831
2	2	El Paso Natural Gas Co.	20,282	10,589	9,675	18	3,999,310	1,249,408	1,221,515	140,735	1,146,622	88,858
3	3	Columbia Gas Transmission Co.	18,928	11,125	6,590	1,213	1,965,946	790,085	750,430	81,490	1,261,690	226,042
4	4	Tennessee Gas Pipeline Corp.	14,515	14,482	31	2	3,078,801	1,528,144	1,265,743	164,189	2,173,526	202,715
5	5	K N Energy Inc.	13,689	10,540	3,113	36	105,500	25,900	353,342	38,498	346,629	29,542
7	6	Natural Gas Pipeline Co. of America	12,779	10,687	1,798	294	1,6[illegible]5,206	1,357,198	1,556,028	177,851	1,006,797	158,060
6	7	Panhandle Eastern Pipe Line Co.	12,481	6,622	5,729	130	97[illegible],467	730,345	597,881	65,005	535,453	26,019
8	8	ANR Pipeline Co.	12,395	9,714	2,212	469	2,141,390	1,093,261	1,032,799	175,360	601,313	120,518
9	9	Transcontinental Gas Pipe Line Corp.	10,833	10,583	133	117	3,046,361	1,693,984	1,260,517	139,166	1,594,865	170,618
13	10	Lone Star Gas Co.	10,345	8,065	2,193	87	480,212	134,721	743,362	30,295	373,663	36,818
11	11	Arkla Energy Resources	10,170	6,626	3,477	67	845,073	494,259	1,376,238	177,508	2,022,272	151,285
10	12	Texas Eastern Transmission Corp.	10,091	9,847	48	196	1,853,251	677,304	1,571,751	135,421	1,868,434	257,890
12	13	Williams Natural Gas Co.	9,777	5,857	3,745	175	307,598	0	382,088	-8,291	529,331	33,838
14	14	United Gas Pipe Line Co.	9,313	7,350	1,935	28	1,056,136	645,171	496,080	101,305	536,893	22,075
16	15	CNG Transmission Corp.	8,431	3,793	4,119	519	767,894	535,045	1,066,759	89,480	808,038	114,362
22	16	Southern Natural Gas Co.	7,798	7,638	112	48	1,164,166	0	690,240	83,235	552,312	64,229
17	17	Northwest Pipeline Corp.	6,965	3,563	3,395	7	547,284	506,332	395,012	105,857	658,482	72,408
18	18	Colorado Interstate Gas Co.	6,140	3,047	3,034	59	634,705	369,948	429,530	77,427	282,154	20,556
19	19	Texas Gas Transmission Corp.	6,125	5,861	39	225	1,089,649	544,387	668,033	57,953	359,789	67,480
21	20	Enron Intrastate Pipelines[G]	5,755	3,081	2,253	421	562,577	206,806	1,118,536	77,814	3,109,267	54,560
23	21	Pacific Gas & Electric Co.	5,577	4,288	1,037	52	836,700	95,300	21,328,850	281,192	24,523,550	497,808
24	22	Valero Transmission Co. LP	5,258	3,833	1,425	0	649,975	649,975	252,289	36,534	516,568	7,075
25	23	Trunkline Gas Co.	4,755	4,198	530	27	908,567	475,926	479,682	22,315	346,747	111,096
27	24	Florida Gas Transmission Co.	4,426	4,426	0	0	369,975	107,706	587,917	26,184	180,544	10,948
28	25	Columbia Gulf Transmission Co.	4,286	4,286	0	0	2,485,335	1,110,742	144,574	18,262	915,535	28,015
29	26	ONG Transmission Co.	4,212	4,212	0	0	198,707	52,463	7,748	13,415	186,377	11,566
30	27	Williston Basin Interstate Pipeline Co.	4,049	3,150	747	152	74,842	56,183	107,536	7,535	179,041	5,047
32	28	Southern California Gas Co.	3,395	3,267	0	12[illegible]	1,026,482	480,479	3,212,625	276,110	305,005	359,645
31	29	Montana Power Co.	3,335	2,010	1,246	79	29,766	0	109,491	23,704	219,675	514
33	30	National Fuel Gas Supply Corp.	3,221	1,370	1,390	461	221,941	76,322	486,943	30,672	189,204	14,265
34	31	Enogex Inc.	3,001	980	2,021	0	157,454	157,429	55,759	21,016	67,786	4,184
35	32	East Ohio Gas Co., The	2,854	1,227	1,369	258	253,440	76,300	934,382	57,159	623,525	48,018
36	33	North Carolina Natural Gas Corp.	2,678	871	1,807	0	35,881	0	154,067	4,910	75,455	11,529
45	34	Southwestern Gas Pipeline Inc.	2,628	72	2,555	1	39,965	0	8,948	3,022	57,089	325
37	35	United Texas Transmission Co.	2,612	2,123	489	0	466,894	453,254	172,709	29,524	429,516	40,509
38	36	Michigan Consolidated Gas Co.	2,476	2,258	106	112	456,012	133,284	1,018,367	61,964	76,295	6,256
39	37	Questar Pipeline Co.	2,435	1,665	720	50	410,287	159,912	253,243	31,828	209,297	28,327
42	38	Peoples Natural Gas Co., The	2,236	950	1,247	39	75,963	27,824	314,366	26,991	368,253	27,487
44	39	Southern Union Co.	2,231	1,380	837	14	43,120	5,981	197,460	0	0	0
45	40	Kentucky-West Virginia Gas Co.	2,209	125	2,084	0	33,691	25,911	121,163	41,478	51,501	1,097
41	41	T. W. Phillips Gas & Oil Co.	2,187	1,148	1,039	0	19,838	1,165	68,809	7,191	70,446	5,260
47	42	Equitrans Inc.	2,104	528	1,501	135	84,717	0	205,221	14,000	155,251	7,141
46	43	Mississippi River Trans. Co.	2,162	2,018	65	79	280,065	81,514	517,651	15,584	204,649	10,462
50	44	Western Gas Supply Co.	2,149	1,678	452	19	95,507	58,480	140,288	10,781	45,109	24,602
40	45	Transok Inc.	2,140	1,886	1,140	0	26,600	0	115,521	10,241	153,165	8,503
48	46	Texas Utilities Fuel Co.	2,100	1,852	248	0	343,195	514	884,963	16,889	126,522	2,195
49	47	KPL Gas Service	2,036	1,693	341	2	51,311	29,952	686,048	24,120	578,279	85,617
52	48	Louisiana Intrastate Gas Corp.	1,861	1,861	0	0	213,424	0	71,658	9,344	157,595	3,009
51	49	Phillips Natural Gas Co.	1,811	352	1,459	0	170,318	0	53,238	7,930	193,325	8,477
53	50	Peoples Natural Gas	1,772	1,221	551	0	145,121	75,445	279,264	[illegible],661	184,116	19,782

The 100 Leading Gas Pipelines

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Rank 90	Rank 91	Name Of Company	Miles of Gas Pipeline Operated Total	Transmission	Gathering	Storage	1990 Gas Throughput MMcf	1990 Gas Transported MMcf	1990 Oper. Revenues $(000)	1990 Oper. Income $(000)	Gas Plant Net Value $(000) 12-31-90	Additions To Plant 1990 $(000)
54	51	Arkansas Western Gas Co.	1,689	1,320	369	0	26,716	0	0	0	0	0
55	52	South Carolina Pipeline Corp.	1,684	1,684	0	0	82,524	10,795	254,919	10,759	87,008	2,619
56	53	Exxon Gas System Inc.	1,649	1,649	0	0	325,634	254,617	172,760	39,235	68,935	9,520
60	54	Great Lakes Gas Tranmission LP	1,495	1,495	0	0	527,612	0	177,209	34,652	555,086	253,977
58	55	Central Illinois Public Service Co.	1,377	21	1,356	0	20,268	11,391	111,699	17,808	90,247	4,701
59	56	Northern Indiana Public Service Co.	1,374	1,336	0	38	264,024	133,950	625,159	52,205	3,136,177	4,984
61	57	Consumers Power Co.	1,231	1,117	9	105	343,409	127,117	1,057,134	85,714	75,580	3,724
63	58	East Tennessee Natural Gas Co.	1 121	1,121	0	0	86,380	51	244,871	10,447	121,777	34,633
62	59	Clajon Gas Company LP	1,103	1,103	0	0	37,421	6,827	83,233	0	13,411	0
64	60	Carnegie Natural Gas Co.	1,090	221	869	0	26,436	19,198	70,364	3,921	54,285	192
65	61	Ferguson Crossing Pipe Line Co.	994	58	936	0	27,014	5,554	12,838	8,470	22,274	1,715
66	62	Algonquin Gas Transmission Co.	994	994	0	0	252,170	135,145	467,159	24,204	258,466	46,892
68	63	Bridgeline Gas Distribution Co.	850	850	0	0	0	0	0	0	0	0
69	64	Pacific Gas Transmission Co.	841	799	42	0	500,000	128,000	913,057	21,367	181,997	41,700
70	65	North Penn Gas Co.	837	577	249	11	8,608	5,307	30,751	5,309	46,587	5,601
71	66	Northern Border Pipeline Co.	822	822	0	0	399,600	399,600	136,399	96,535	963,108	1,016
0	67	Paiute Pipeline Co.	770	770	0	0	0	0	0	0	0	0
72	68	South Georgia Natural Gas Co.	767	767	0	0	24,620	0	26,343	1,193	12,516	817
0	69	Hadson Gas Systems Inc.	759	425	330	4	200,000	0	600,000	0	0	0
73	70	Michigan Gas Storage Co.	693	545	0	148	240,088	233,245	-10,783	4,052	1,476	30
[illegible]	71	Channel Industries Gas Co.	665	665	0	0	196,882	0	25,511	-4,734	21,035	5,027
76	72	Intermountain Gas Co.	641	641	0	0	52,980	0	73,639	9,587	6,757	153
77	73	Llano Inc.	623	398	225	0	50,405	50,405	50,462	2,301	0	0
78	74	Apollo Gas Co.	616	67	549	0	2,262	0	11,657	1,071	24,854	1,920
80	75	Monterey Pipeline Co.	596	596	0	0	49,971	9,888	85,994	6,759	22,142	1,351
81	76	Washington Gas Light Co.	571	553	18	0	134,140	824	7,353,534	769,784	89,577	165
82	77	Commonwealth Gas Pipeline Corp.	560	560	0	0	80,615	69,806	67,825	1,619	35,211	3,378
83	78	Palo Duro Pipeline Co.	559	388	171	0	20,882	20,582	4,473	-965	36,962	1,361
84	79	Sunterra Gas Gathering Corp.	557	2	555	0	39,064	8,446	77,389	1,898	17,727	769
85	80	Viking Gas Transmission Co.[R]	549	549	0	0	128,572	108,703	84,718	6,190	14,172	591
86	81	Arkansas Oklahoma Gas Corp.	542	366	176	0	23,173	10,865	45,645	0	15,702	0
87	82	Inland Gas Co. Inc.	511	118	393	0	5,653	2,086	15,585	4,024	6,415	987
90	83	National Gas & Oil Corp.	507	0	499	8	10,819	6,740	27,255	5,188	0	0
0	84	Southwest Gas Transmission Co.	506	506	0	0	0	0	0	0	0	0
88	85	Southeast Alabama Gas District	505	505	0	0	8,817	0	0	0	0	0
89	86	Winnie Pipeline Co.	496	426	70	0	11,827	0	5,460	3,796	21,553	1,618
26	87	Transwestern Pipeline Co.	482	482	0	0	333,987	0	281,971	44,963	244,411	47,051
92	88	Seagull Gas Pipeline Corp.	457	201	256	0	220,685	0	178,401	33,683	241,239	1,831
0	89	XCL Sunrise Inc.	450	80	370	0	6,100	0	0	0	0	5
93	90	Amoco Gas Co.	446	446	0	0	181,975	57,045	258,526	16,339	32,837	-1,050
94	91	Trailblazer Pipeline Co.	436	436	0	0	67,780	76,677	31,584	15,570	182,727	75
79	92	Acadian Gas Pipeline System	430	430	0	0	212,762	65,100	291,000	6,952	198,000	2,600
95	93	Sea Robin Pipeline Co.	388	388	0	0	255,514	240,552	122,450	55,454	4,888	575
96	94	Alaska Pipeline Co.	360	350	10	0	0	44,518	0	98,605	14,146	74,591
98	95	Midwestern Gas Transmission Co.	354	354	0	0	150,258	97,640	165,240	2,891	35,780	1,020
99	96	Pacific Interstate Trans. Co.	351	351	0	0	79,883	0	246,300	2,877	25,939	0
0	97	Alabama-Tennessee Natural Gas Co.	315	0	0	0	33,731	0	66,000	0	0	0
0	98	Louisville Gas & Electric	276	177	0	99	57,709	6,351	169,570	9,897	129,115	11,416
100	99	Valero Interstate Trans. Co.	272	129	143	0	52,263	52,263	3,772	-5,355	4,503	165
0	100	Wyoming Interstate Co.	269	269	0	0	78,301	78,301	22,748	10,685	109,545	60

The 100 Leading Liquids Pipelines

The P&GJ 500 . . . dimensions of the pipeline energy business

Rank 90	Rank 91	Name of Company	Barrels Delivered Out Of System In 1990 (000) Total	Crude Oil	Products	1990 Financial Operating Rev ($000)	Oper. Income ($000)	Plant Net Value ($000) 12-31-90	Additions To Prop. Value ($000)	Miles of Pipeline Owned/Operated Gath. Lines	Crude Trunk	Products Trunk	Total
2	1	Colonial Pipeline Co.	665,269	0	665,269	527,136	285,362	796,124	14,692	0	0	5,274	5,274
3	2	Marathon Pipe Line Co.	643,630	373,662	269,968	158,661	78,859	175,612	5,773	1,218	1,561	1,469	4,248
1	3	Alyeska Pipeline Service Co.	636,179	636,179	0	0	0	0	0	0	800	0	800
4	4	Chevron Pipe Line Co.	598,270	346,780	251,490	215,705	66,718	381,479	0	2,014	2,488	3,291	7,793
5	5	Shell Pipe Line Corp.	555,089	419,032	136,057	191,071	73,017	191,466	16,189	2,050	4,736	434	7,214
8	6	Texaco Pipeline Inc.	544,143	411,264	132,879	139,668	37,898	220,656	24,024	1,925	3,223	1,252	6,400
6	7	Exxon Pipeline Co.	512,488	400,500	111,988	776,126	278,008	1,270,131	34,923	1,832	4,917	2,592	9,341
7	8	ARCO Pipe Line Co.	506,728	409,031	97,697	630,025	313,089	1,432,137	78,337	1,625	2,402	2,867	6,894
9	9	Amoco Pipeline Co.	480,603	331,928	148,675	199,822	76,170	226,832	30,628	2,227	7,325	2,298	11,850
10	10	Lakehead Pipe Line Co. Inc.	447,039	447,039	0	205,672	87,812	272,737	28,375	0	2,614	0	2,614
11	11	BP Pipelines (Alaska) Inc.	338,877	338,877	0	1,297,888	469,249	2,948,871	40,537	0	818	0	818
14	12	LOOP Inc.	331,637	331,637	0	0	0	660,219	0	0	48	0	48
12	13	Santa Fe Pacific Pipelines Inc.	326,503	0	326,503	192,868	98,874	453,510	13,614	0	0	3,294	3,294
13	14	Mobil Pipe Line Co.	311,814	211,797	100,017	158,475	60,333	102,726	9,109	3,282	4,641	1,724	9,647
15	15	Buckeye Pipe Line Co. LP	279,158	0	279,158	138,390	50,768	436,047	10,122	0	0	3,023	3,023
16	16	BP Oil Pipeline Co.	277,750	185,447	92,303	77,772	33,482	80,291	1,407	976	537	108	1,621
18	17	Conoco Pipe Line Co.	255,236	197,081	58,155	81,437	20,816	119,749	12,359	3,710	1,354	2,155	7,219
17	18	Phillips Pipe Line Co.	249,089	59,220	189,869	149,385	51,406	284,627	67,194	1,044	819	4,278	6,141
19	19	LOCAP Inc.	216,770	216,770	0	19,769	12,189	79,457	145	0	59	0	59
20	20	Plantation Pipe Line Co.	177,778	0	177,778	111,626	41,383	126,935	5,879	0	0	3,160	3,160
23	21	Williams Pipe Line Co.	171,450	3,146	168,304	138,143	27,058	454,862	35,980	0	0	6,674	6,674
21	22	Sun Pipe Line Co.	170,894	47,070	123,824	67,186	14,316	76,168	9,166	384	380	1,737	2,501
24	23	Mid-America Pipeline Co.	164,537	33,235	131,302	145,746	69,148	296,142	10,821	0	19	7,101	7,120
22	24	Explorer Pipeline Co.	150,397	0	150,397	91,602	51,768	258,922	1,869	0	0	1,397	1,397
26	25	TE Products Pipeline Co.[1]	131,088	0	131,088	123,331	51,691	491,924	8,449	0	0	4,109	4,109
25	26	Mid-Valley Pipeline Co.	126,376	126,376	0	45,125	18,210	26,957	1,451	0	1,984	0	1,984
29	27	West Texas Gulf Pipe Line Co.	120,005	120,005	0	30,078	16,397	6,791	2,442	0	579	0	579
27	28	CITGO Pipeline Co.	114,283	108,061	6,222	15,748	2,064	16,946	4,335	607	692	3	1,302
0	29	Kuparuk Transportation Co.	113,225	113,225	0	69,813	557,669	94,891	0	0	37	0	37
28	30	Koch Pipelines Inc.	110,772	57,707	53,065	69,470	23,897	194,452	5,883	914	1,105	1,418	3,437
30	31	Texas-New Mexico Pipe Line Co.	108,219	108,219	0	28,237	9,859	10,811	4,801	1,690	2,175	0	3,865
36	32	Chicap Pipeline Co.	104,830	104,830	0	15,265	9,155	19,628	819	0	203	0	203
35	33	Ashland Pipe Line Co.	102,709	102,709	0	44,538	7,385	60,718	2,757	502	787	0	1,289
34	34	Olympic Pipe Line Co.	97,290	0	97,290	29,270	11,404	31,515	988	0	0	416	416
31	35	Four Corners Pipe Line Co.	94,613	94,613	0	41,581	12,571	97,949	3,348	274	1,183	0	1,457
37	36	Wolverine Pipe Line Co.	92,233	0	92,233	29,929	17,791	29,438	503	0	0	621	621
33	37	Atlantic Pipeline Corp.	91,430	47,373	44,057	33,581	7,577	67,289	2,641	0	12	929	941
41	38	Total Pipeline Corp.	87,420	70,085	17,335	13,497	1,212	43,308	5,555	691	658	138	1,487
38	39	Lake Charles Pipe Line Co.	84,087	0	84,087	4,204	2,417	5,213	82	0	0	13	13
39	40	Minnesota Pipe Line Co.	80,021	80,021	0	27,207	11,805	83,332	4,089	0	675	0	675
40	41	Shamrock Pipeline Corp.	73,076	46,957	26,119	19,015	3,899	23,909	5,970	549	418	603	1,570
47	42	Southcap Pipe Line Co.	71,750	71,750	0	21,240	7,535	26,698	587	0	0	0	0
44	43	Owensboro-Ashland Co.	71,690	71,690	0	12,006	3,389	24,985	758	0	266	0	266
43	44	Badger Pipeline Co.	69,980	0	69,980	12,510	3,389	9,023	319	0	0	334	334
42	45	West Shore Pipe Line Co.	64,772	0	64,772	17,231	8,093	13,838	505	0	0	321	321
48	46	Otlanking Pipeline Inc.	58,195	57,641	554	5,954	2,610	6,729	885	0	13	18	31
46	47	Unocal Pipeline Co.	57,023	53,912	3,111	46,154	16,126	95,729	1,418	236	1,446	16	1,698
55	48	Seminole Pipeline Co.	53,403	0	53,403	33,921	10,834	162,724	432	106	0	634	740
49	49	Kaneb Pipe Operating Part. LP	52,980	0	52,980	37,618	18,380	64,375	2,626	0	0	2,083	2,083
51	50	Jayhawk Pipeline Corp.	47,846	47,846	0	12,997	3,403	30,579	0	784	729	0	1,513

The 100 Leading Liquids Pipelines

The P&GJ 500 . . . dimensions of the pipeline energy business

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0	51	Kenai Pipe Line Co.	46,600	30,637	15,963	6,836	3,812	3,902	249	0	25	0	25
52	52	Collins Pipeline Co.	44,471	0	44,471	5,835	2,407	9,034	753	0	0	124	124
54	53	Platte Pipe Line Co.	41,533	41,533	0	22,885	14,099	5,960	415	0	1,282	0	1,282
62	54	Portland Pipe Line Corp.	39,619	39,619	0	23,594	11,490	12,594	353	0	167	0	167
55	55	Endicott Pipeline Co.	38,601	38,601	0	27,407	14,567	36,861	210	0	25	0	25
59	56	Osage Pipe Line Co.	38,455	38,455	0	6,845	2,548	11,465	210	0	136	0	136
69	57	All American Pipeline Co.	38,326	38,326	0	43,789	-33,059	1,507,624	40,741	0	1,108	0	1,108
66	58	American Petrofina Pipe Line Co.	35,240	35,240	0	14,993	6,171	22,035	1,341	0	1,104	0	1,104
57	59	Mid-Continent Pipe Line Co.	34,339	34,339	0	18,641	5,911	22,194	1,963	2,498	1,101	0	3,599
50	60	Chaparral Pipeline (NGL) Co.	34,312	0	34,312	26,854	13,734	90,593	550	0	0	946	946
56	61	Laurel Pipe Line Co.	33,866	0	33,866	15,298	7,079	8,088	417	0	0	351	351
58	62	Dixie Pipeline Co.	32,500	0	32,500	45,200	18,300	21,900	2,400	0	0	1,303	1,303
63	63	Butte Pipe Line Co.	30,254	30,254	0	8,774	3,503	2,443	150	0	373	0	373
60	64	Enron Liquids Pipeline Co.	30,037	0	30,037	35,448	8,520	80,153	5,277	0	0	1,617	1,617
61	65	Hess Pipeline Co.	29,654	29,654	0	12,412	5,252	15,343	5,221	0	447	0	447
64	66	Calnev Pipe Line Co.	29,454	0	29,454	22,564	6,158	94,937	702	0	0	583	583
0	67	Golden Valley Electric Association Inc.	28,685	28,685	0	1,109	536	3,064	119	0	7	0	7
73	68	Paloma Pipe Line Co.	27,507	27,507	0	2,572	1,559	2,471	19	0	0	0	0
67	69	Belle Fourche Pipeline Co.	26,733	26,733	0	2,543	-205	11,172	990	1,282	729	0	2,011
65	70	Mobil Alaska Pipeline Co.	26,287	26,287	0	103,671	59,189	237,756	6,383	0	0	0	0
71	71	Cochin Pipeline System	26,269	0	26,269	48,887	22,814	145,858	447	0	0	1,197	1,197
70	72	Yellowstone Pipeline Co.	25,151	0	25,151	15,962	7,651	8,026	1,421	0	0	753	753
68	73	Mobil Eugene Island Pipeline Co.	24,421	24,421	0	21,241	17,094	18,037	152	0	134	0	134
0	74	Clark Pipe Line Co.	24,075	24,075	0	1,248	352	1,401	0	0	55	0	55
78	75	Buckeye Pipe Line Co. of Michigan LP	20,927	14,533	6,394	5,900	-556	57,868	8	0	160	4	164
77	76	Portal Pipe Line Co.	20,797	20,797	0	13,166	6,830	25,471	2,868	338	615	0	953
74	77	Kiantone Pipeline Co.	20,735	20,735	0	4,354	1,192	6,714	5	0	78	0	78
75	78	Wyco Pipe Line Co.	20,217	0	20,217	15,261	8,849	30,298	1,260	0	0	677	677
72	79	Farmland Industries Inc.	20,204	20,204	0	4,306	585	13,439	1,543	618	239	0	857
76	80	Tecumseh Pipe Line Co.	18,437	18,437	0	3,731	1,560	1,121	0	0	0	207	207
79	81	Cenex Pipeline Co.	16,405	7,573	8,832	9,124	0	11,290	0	147	70	445	662
82	82	Coastal Pipeline Co.	15,533	0	15,533	2,877	1,093	5,369	8	0	0	8	8
81	83	Diamond Shamrock R&M	15,418	0	15,418	12,049	4,409	24,574	4,678	0	0	622	622
80	84	Ohio River Pipe Line Co.	13,530	0	13,530	7,859	2,124	19,567	1,769	0	0	400	400
84	85	Kaw Pipe Line Co.	13,475	13,475	0	4,901	1,347	2,262	515	1,372	0	0	1,372
86	86	Gulf Central Pipeline Co.	12,747	0	12,747	24,665	16,187	67,238	1,257	0	0	1,975	1,975
85	87	Chase Transportation Co.	12,217	0	12,217	7,049	3,647	22,976	0	0	0	716	716
88	88	Tesoro Alaska Pipe Line Co.	10,982	0	10,982	6,700	3,818	12,069	0	0	0	70	70
91	89	Sun Oil Line Co. of Michigan	10,600	10,600	0	-3,915	2,142	143	0	0	4	0	4
0	90	Antelope Pipe Line Co.	10,385	10,385	0	2,866	1,100	2	0	0	86	0	86
94	91	Dome Pipeline Corp.	10,039	0	10,039	2,942	1,407	11,564	66	0	0	134	134
89	92	Amerada Hess Pipeline Corp.	9,732	9,732	0	55,605	19,146	90,124	1,218	0	819	0	819
92	93	Phillips Alaska Pipeline Co.	9,277	9,277	0	33,533	17,167	76,244	0	0	0	0	0
95	94	Mapco Ammonia Pipeline Inc.	8,337	0	8,337	9,829	4,999	19,805	166	0	0	1,097	1,097
0	95	Giant Industries Arizona	8,087	6,491	1,596	2,745	90	5,421	198	176	155	11	322
0	96	EPC Partners Ltd.	7,920	7,920	0	3,437	-820	32,371	0	0	0	0	0
96	97	Chisholm Pipeline Co.	7,667	0	7,667	2,873	1,273	13,644	2,537	0	0	203	203
0	98	Crown-Rancho Pipe Line Corp.	7,155	7,155	0	1,865	1,288	225	36	0	0	0	0
90	99	Cook Inlet Pipe Line Co.	6,921	6,921	0	4,874	-7,859	28,458	19,687	0	55	0	55
0	100	Milne Point Pipe Line Co.	6,634	6,634	0	9,756	6,758	22,998	11	11	0	0	11

Top 300 Gas Utilities Alphabetical Listing

Company	1991 Rank
Alabama Gas Corp.	53
Albany Water, Gas & Light Commission	165
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Arkansas Oklahoma Gas Corp.	120
Arkansas Western Gas Co.	79
Arkla Inc.	5
Associated Natural Gas co.	118
Atlanta Gas Light Co.	9
Atmos Energy Corp.	25
Austell Natural Gas System	135
Austin Utilities	200
Baltimore Gas & Electric Co.	27
Battle Creek Gas Co.	139
Bay City Gas Co.	248
Bay State Gas Co.	55
Berkshire Gas Co.	141
Bluefield Gas Co.	289
Boston Gas Co.	29
Brazos River Gas Co.	166
Bristol & Warren Gas Co.	238
Brooklyn Union Gas Co.	11
Brownsville Utility Department	291
CP National Corp.	111
Canton Municipal Utilities	265
Carnegie Natural Gas Co.	250
Cartersville Gas Dept., City of	230
Cascade Natural Gas Corp.	96
Cedar Falls Utilities	197
Central Hudson Gas & Electric Corp.	122
Central Illinois Light Co.	68
Central Illinois Public Serv. Co.	74
Chambersburg Gas Dept., Borough of	272
Chanute Gas Dept., City of	268
Charlottesville Public Works, City of	180
Chattanooga Gas Co.	131
Chesapeake Utilities Corp.	148
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Cincinnati Gas & Electric Co.	36
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Columbia Gas Of New York Inc.	113
Columbia Gas of Maryland Inc.	145
Columbia Gas of Ohio Inc.	10
Columbia Gas of Pennsylvania	40
Commission of Public Works, Laurens, SC	278
Commonwealth Gas Co.	63
Commonwealth Gas Services Inc.	83
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Connecticut Natural Gas Corp.	82
Consolidated Edison Co. of New York Inc.	14
Consolidated Gas Distribution Companies	4
Consumers Gas Co.	246
Consumers Gas Utility Co.	216
Consumers Power Co.	7
Corinth Gas & Water Dept.	284
Corning Natural Gas Corp.	182
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Covington Natural Gas System, City of	243
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Dalton Utilities, Gas of Dalton, Ga.	211
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Dixie Gas Co. Inc.	242
Dublin, City of	298
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Dumas, City of	264
Dyersburg Municipal Gas System	224

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Top 300 Gas Utilities Alphabetical Listing

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Equitable Gas Co.	50
Essex County Gas Co.	133
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Fitchburg Gas & Electric Light Co.	174
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Ft. Morgan Municipal Utilities	296
Ft. Pierce Utilities Authority	270
Fultondale Gas Board	236
Gainesville Gas Co.	164
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Great Plains Natural Gas Co.	168
Greeley Gas Co.	101
Greenville Utilities Commission	228
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Greer Public Works	287
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Gulf States Utilities Co.	106
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Illinois Gas Co.	202
Illinois Power Co.	57
Indiana Gas Co. Inc.	45
Indiana Natural Gas Corp.	252
Intermountain Gas Co.	92
Interstate Power Co.	125
Iowa Southern Utilities Co.	132
Iowa-Illinois Gas & Electric Co.	61
Jackson Utility Division	167
K N Energy Inc.	40
KPL Gas Service	15
Knoxville Utilities Board	154
Kokomo Gas & Fuel Co.	146
La Grange Gas Dept., City of	218
Laclede Gas Co.	23
Lake Apopka Natural Gas Dist.	217
Lancaster County Gas Authority	231
Lancaster Municipal Gas Co.	181
Las Cruces Gas System, City of	163
Las Vegas Natural Gas System	286
Lawrenceburg Gas Co.	276
Lawrenceville Natural Gas System	187
Leesburg, City of	207
Lexington Natural Gas Dept., City of	257
Lone Star Gas Co.	8
Long Beach Gas Dept.	80
Long Island Lighting Co.	32
Los Alamos County Utilities	226
Louisiana Gas Service Co.	58
Louisville Gas & Electric Co.	56
Madison Gas & Electric Co.	102
Marshall County Gas District	179
Memphis Light, Gas & Water Div.	52
Mesa, City of	156
Metropolitan Utilities District of Omaha	78
Michigan Consolidated Gas Co.	12
Michigan Gas Co.	105
Michigan Gas Utilities Co.	86
Middle Tennessee Natural Gas Util. Dist.	153
Midwest Energy Inc.	184
Midwest Gas	38
Midwest Natural Gas Corp.	191
Milton Natural Gas System, City of	258
Mississippi Valley Gas Co.	60
Mobile Gas Service Corp.	103
Montana Power Co.	93
Montana-Dakota Utilities Co.	69
Moran Utilities Co.	176
Morton Utilities	279

If You Need

CATHODIC PROTECTION

You May Need

THE KIRK CELL

A CATHODIC DECOUPLING DEVICE SPECIFICALLY DESIGNED FOR FAULT CURRENT SERVICE, REMOVAL OF INDUCED A-C POWER ON PROTECTED STRUCTURES

The Kirk Cell acts as an "electrochemical switch", blocking d-c voltages in the cathodic protection range while instantaneously shunting hazardous voltages to ground. The Kirk Cell consists of multuple pairs of stainless steel plates immersed in a potassium hydroxide electrolyte solution. An oil seal floating on the electrolyte prevents evaporation, absorption of atmospheric gasses and excessive foaming under high current flow. D-C current flow through the Kirk Cell causes a film of gas to form on the plates offering a high resistance to low voltage d-c current. As the applied voltage across the cell increases, current flow through the cell increases causing the thickness of the polarization gas film to increase. When the leakage threshold is exceeded, the film starts to break down and the cell resistance quickly decreases as the applied voltage increases. A-C voltages and higher d-c voltages see the Kirk Cell as a dead short. Galvanized steel enclosures are offered for exterior installations of the cell, with locking features if desired. The enclosures are also available in 11 gauge, small arms proof constuction. Now available, the 5-2/2 and 50-2/2 Dual Enclosure will house two Kirk Cells.

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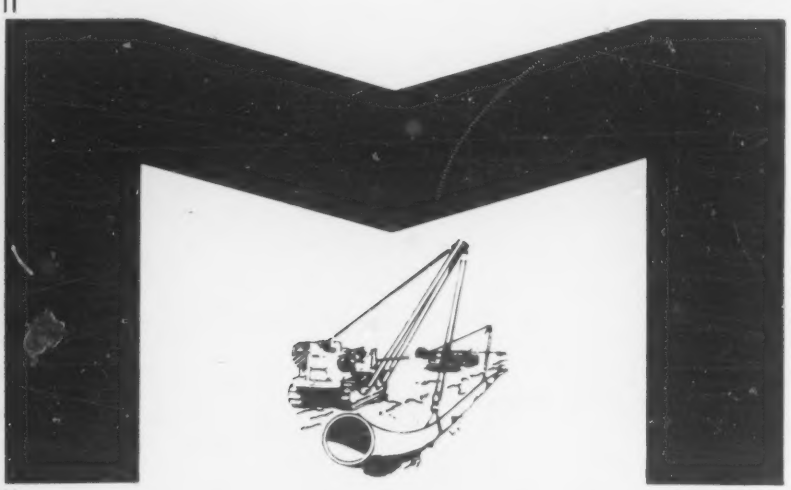
 Circle 122

Top 300 Gas Utilities Alphabetical Listing

Company	1991 Rank
Moss Point Utilities, City of	254
Moultrie Gas Department	300
Mountain Fuel Supply Co.	28
Mountaineer Gas Co.	67
NE Okla. Public Facilities Authority	183
National Fuel Gas Distribution Corp.	18
National Gas & Oil Corp.	160
Nebraska City Utilities	280
New Jersey Natural Gas Co.	47
New Orleans Public Service Inc.	75
New Ulm Public Utilities Commission	259
New York State Electric & Gas Corp.	81
Niagara Mohawk Power Corp.	30
Norco Gas & Fuel Co. Inc.	205
North Carolina Natural Gas Corp.	95
North Penn Gas Co.	140
North Shore Gas Co.	91
Northern Illinois Gas Co.	5
Northern Indiana Fuel & Light Co. Inc.	151
Northern Indiana Public Service Co.	22
Northern States Power Co.	39
Northwest Alabama Gas District	214
Northwest Natural Gas Co.	45
Northwestern Public Service Co.	114
Norwich Dept. of Public Utilities	220
Oak Ridge Utility District	252
Ohio Gas Co.	136
Ohio Valley Gas Corp.	150
Okaloosa County Gas District	157
Oklahoma Natural Gas Co.	20
Orange & Rockland Utilities Inc.	97
Orangeburg Public Utilities	206
Owatonna Public Utilities	219
Pacific Gas & Electric Co.	2
Palatka Gas Authority	271
Palm Beach County Utilities Corp.	177
Palo Alto Utilities, City of	155
Pascagoula Utilities	239
Penn Fuel Gas Inc.	143
Pennsylvania & Southern Gas Co.	169
Pennsylvania Gas & Water Co.	84
Peoples Gas Light & Coke Co.	16
Peoples Gas System Inc.	72
Peoples Natural Gas Co. of S.C.	199
Philadelphia Electric Co.	42
Philadelphia Gas Works	26
Piedmont Natural Gas Co.	34
Pike Natural Gas Co.	244
Polaris Corp.	266
Powell-Clinch Utility District	257
Providence Gas Co.	76
Public Service Co. of Colorado	15
Public Service Co. of N.C. Inc.	59
Public Service Electric & Gas Co.	6
Richmond Gas Corp.	178
Richmond Public Utilities	109
Rio Grande Natural Gas Association	208
Rio Grande Valley Gas Co.	112
Roanoke Gas Co.	128
Rochester Gas & Electric Corp.	54
Rocky Mount, City of	189
San Diego Gas & Electric Co.	19
Shelby Gas Dept., City of	251
South Carolina Electric & Gas Co.	66
South Florida Gas Co.	295
South Jersey Gas Co.	65
Southeast Alabama Gas District	142
Southeastern Michigan Gas Co.	108
Southern California Gas Co.	1
Southern Connecticut Gas Co.	77
Southern Indiana Gas & Elect. Co.	98
Southern Public Service Co.	213
Southern Union Gas Co.	35
Southwest Gas Corp.	17
Southwestern Virginia Gas Co.	290
Springfield City Utilities	117
St. Croix Valley Natural Gas Co.	297
St. Joseph Light & Power Co.	241
St. Lawrence Gas Co.	186
Suburban Fuel Gas Inc.	260
Summerville Natural Gas System	283
Superior Water, Light & Power Co.	203
Sylacauga Utilities Board	247
Syracuse Suburban Gas Co. Inc.	274
T. W. Phillips Gas & Oil Co.	123
Tallahassee Municipal Gas System	201
Terre Haute Gas Corp.	138



Pipeline Construction

Maintenance Crews

Compressor Station

Process Piping

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Circle 124

Top 300 Gas Utilities Alphabetical Listing

Company	1991 Rank	Company	1991 Rank	Company	1991 Rank
Thibodaux Gas System, City of	282	Vicksburg Water & Gas Admin.	215	Westpac Utilities	110
Thomasville Water & Light Dept.	275	Ville Platte Gas System	285	Willmut Gas & Oil Co.	161
Toccoa Natural Gas System	269	Virginia Natural Gas	73	Wilson, City of	222
Trussville Utilities Board	173	Wakefield Municipal Light Dept.	255	Winfield, City of	261
UGI Corp.	64	Warner Robins, City of	185	Wisconsin Fuel & Light Co.	129
Union Electric Co.	94	Washington Gas Light Co.	21	Wisconsin Gas Co.	31
Union Gas Co.	245	Washington Natural Gas Co.	41	Wisconsin Natural Gas Co.	53
Union Light, Heat & Power Co.	116	Washington Water Power Co.	99	Wisconsin Power & Light Corp.	85
United Cities Gas Co.	51	Watertown Municipal Utilities	234	Wisconsin Public Service Corp.	71
Utah Gas Service Co.	249	West Florida Natural Gas Co.	154	Wisconsin Southern Gas Co. Inc.	127
UtiliCorp United Inc.	24	West Tenn. Public Util. Dist.	210	Wyoming Gas Co.	233
Valley Resources Inc.	124	Westfield Gas & Electric Light Dept.	221	Yankee Gas Services Co.	70
Vermont Gas Systems, Inc.	162	Westlake Municipal Natural Gas	263	Zia Natural Gas Co.	292

Top 100 Gas Pipelines Alphabetical Listing

Company	1991 Rank	Company	1991 Rank	Company	1991 Rank
ANR Pipeline Co.	8	Arkla Energy Resources	11	Columbia Gulf Transmission Co.	25
Acadian Gas Pipeline System	92	Bridgeline Gas Distribution Co.	63	Commonwealth Gas Pipeline Corp.	77
Alabama-Tennessee Natural Gas Co.	97	CNG Transmission Corp.	15	Consumers Power Co.	57
Alaska Pipeline Co.	94	Carnegie Natural Gas Co.	60	East Ohio Gas Co., The	32
Algonquin Gas Transmission Co.	62	Central Illinois Public Service Co.	55	East Tennessee Natural Gas Co.	58
Amoco Gas Co.	90	Channel Industries Gas Co.	71	El Paso Natural Gas Co.	2
Apollo Gas Co.	74	Clajon Gas Company LP	59	Enogex Inc.	31
Arkansas Oklahoma Gas Corp.	81	Colorado Interstate Gas Co.	18	Enron Intrastate Pipelines	20
Arkansas Western Gas Co.	51	Columbia Gas Transmission Co.	5	Equitrans Inc.	42

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Circle 125

Top 100 Gas Pipelines Alphabetical Listing

Company	1991 Rank
Exxon Gas System Inc.	53
Ferguson Crossing Pipe Line Co.	61
Florida Gas Transmission Co.	24
Great Lakes Gas Transmission LP	54
Hadson Gas Systems Inc.	69
Inland Gas Co. Inc.	82
Intermountain Gas Co.	72
K N Energy Inc.	5
KPL Gas Service	47
Kentucky-West Virginia Gas Co.	40
Llano Inc.	73
Lone Star Gas Co.	10
Louisiana Intrastate Gas Corp.	48
Louisville Gas & Electric	98
Michigan Consolidated Gas Co.	36
Michigan Gas Storage Co.	70
Midwestern Gas Transmission Co.	95
Mississippi River Trans. Co.	43
Montana Power Co.	29
Monterey Pipeline Co.	75
National Fuel Gas Supply Corp.	30
National Gas & Oil Corp.	83
Natural Gas Pipeline Co. of America	6
North Carolina Natural Gas Corp.	33
North Penn Gas Co.	65
Northern Border Pipeline Co.	66
Northern Indiana Public Service Co.	56
Northern Natural Gas Co.	1
Northwest Pipeline Corp.	17
ONG Transmission Co.	26
Pacific Gas & Electric Co.	21
Pacific Gas Transmission Co.	64
Pacific Interstate Trans. Co.	96
Paiute Pipeline Co.	67
Palo Duro Pipeline Co.	78
Panhandle Eastern Pipe Line Co.	7
Peoples Natural Gas	50
Peoples Natural Gas Co., The	38
Phillips Natural Gas Co.	49
Questar Pipeline Co.	37
Sea Robin Pipeline Co.	93
Seagull Gas Pipeline Corp.	88
South Carolina Pipeline Corp.	52
South Georgia Natural Gas Co.	68
Southeast Alabama Gas District	85
Southern California Gas Co.	28
Southern Natural Gas Co.	16
Southern Union Co.	39
Southwest Gas Transmission Co.	84
Southwestern Gas Pipeline Inc.	34
Sunterra Gas Gathering Corp.	79
T. W. Phillips Gas & Oil Co.	41
Tennessee Gas Pipeline Corp.	4
Texas Eastern Transmission Corp.	12
Texas Gas Transmission Corp.	19
Texas Utilities Fuel Co.	46
Trailblazer Pipeline Co.	91
Transcontinental Gas Pipe Line Corp.	9
Transok Inc.	45
Transwestern Pipeline Co.	87
Trunkline Gas Co.	23
United Gas Pipe Line Co.	14
United Texas Transmission Co.	35
Valero Interstate Trans. Co.	99
Valero Transmission Co. LP	22
Viking Gas Transmission Co.	80
Washington Gas Light Co.	76
Western Gas Supply Co.	44
Williams Natural Gas Co.	13
Williston Basin Interstate Pipeline Co.	27
Winnie Pipeline Co.	86
Wyoming Interstate Co.	100
XCL Sunrise Inc.	89

Top 100 Liquids Pipelines Alphabetical Listing

Company	1991 Rank
All American Pipeline Co.	57
Alyeska Pipeline Service Co.	3
Amerada Hess Pipeline Corp.	92
American Petrofina Pipe Line Co.	58
Amoco Pipeline Co.	9
Antelope Pipe Line Co.	90
ARCO Pipe Line Co.	8
Ashland Pipe Line Co.	33
Atlantic Pipeline Corp.	37
Badger Pipeline Co.	44
Belle Fourche Pipeline Co.	69
BP Oil Pipeline Co.	16
BP Pipelines (Alaska) Inc.	11
Buckeye Pipe Line Co. LP	15
Buckeye Pipe Line Co. of Michigan LP	75
Butte Pipe Line Co.	63
Calnev Pipe Line Co.	66
Cenex Pipeline Co.	81
Chaparral Pipeline (NGL) Co.	60
Chase Transportation Co.	87
Chevron Pipe Line Co.	4
Chicap Pipeline Co.	32
Chisholm Pipeline Co.	97
CITGO Pipeline Co.	28
Clark Pipe Line Co.	74
Coastal Pipeline Co.	82
Cochin Pipeline System	71
Collins Pipeline Co.	52
Colonial Pipeline Co.	1
Conoco Pipe Line Co.	17
Cook Inlet Pipe Line Co.	99
Crown-Rancho Pipe Line Corp.	98
Diamond Shamrock R&M	85
Dixie Pipeline Co.	62
Dome Pipeline Corp.	91
Endicott Pipeline Co.	55
Enron Liquids Pipeline Co.	64
EPC Partners Ltd.	96
Explorer Pipeline Co.	24
Exxon Pipeline Co.	7
Farmland Industries Inc.	79
Four Corners Pipe Line Co.	35
Giant Industries Arizona	95
Golden Valley Electric Association Inc.	67
Gulf Central Pipeline Co.	86
Hess Pipeline Co.	65
Jayhawk Pipeline Corp.	50
Kaneb Pipe Operating Part. LP	49
Kaw Pipe Line Co.	85
Kenai Pipe Line Co.	51
Kiantone Pipeline Co.	77
Koch Pipelines Inc.	30
Kuparuk Transportation Co.	29
Lake Charles Pipe Line Co.	39
Lakehead Pipe Line Co. Inc.	10
Laurel Pipe Line Co.	61
LOCAP Inc.	19
LOOP Inc.	12
Mapco Ammonia Pipeline Inc.	94
Marathon Pipe Line Co.	2
Mid-America Pipeline Co.	25
Mid-Continent Pipe Line Co.	59
Mid-Valley Pipeline Co.	26
Milne Point Pipe Line Co.	100
Minnesota Pipe Line Co.	40
Mobil Alaska Pipeline Co.	70
Mobil Eugene Island Pipeline Co.	73
Mobil Pipe Line Co.	14
Ohio River Pipe Line Co.	84
Oiltanking Pipeline Inc.	46
Olympic Pipe Line Co.	54
Osage Pipe Line Co.	56
Owensboro-Ashland Co.	45
Paloma Pipe Line Co.	68
Phillips Alaska Pipeline Co.	93
Phillips Pipe Line Co.	18
Plantation Pipe Line Co.	20
Platte Pipe Line Co.	53
Portal Pipe Line Co.	76
Portland Pipe Line Corp.	54
Santa Fe Pacific Pipelines Inc.	13
Seminole Pipeline Co.	48
Shamrock Pipeline Corp.	41
Shell Pipe Line Corp.	5
Southcap Pipe Line Co.	42
Sun Oil Line Co. of Michigan	89
Sun Pipe Line Co.	22
TE Products Pipeline Co.	25
Tecumseh Pipe Line Co.	80
Tesoro Alaska Pipe Line Co.	88
Texaco Pipeline Inc.	6
Texas-New Mexico Pipe Line Co.	31
Total Pipeline Corp.	38
Unocal Pipeline Co.	47
West Shore Pipe Line Co.	45
West Texas Gulf Pipe Line Co.	27
Williams Pipe Line Co.	21
Wolverine Pipe Line Co.	36
Wyco Pipe Line Co.	78
Yellowstone Pipeline Co.	72